



MOHAMED SATHAK A J COLLEGE OF ENGINEERING
Sponsored by Mohamed Sathak Trust
(Approved by AICTE, New Delhi and Affiliated to Anna University, Chennai)
Siruseri IT Park, Egattur, Chennai 603 103

B.E – COMPUTER SCIENCE AND ENGINEERING

S.NO	Name of the course that include experiential learning through Project work/ Internship
1	CS6202 - Programming and Data Structures I
2	CS6301 - Programming and Data Structure II
3	CS6001 - C# and .Net programming
4	CS6703 - Grid and Cloud Computing
5	CS6302 - Database Management Systems
6	CS6551 - Computer Networks
7	CS6659 - Artificial Intelligence
8	CS6701 - Cryptography and Network Security
9	CS6008 - Human Computer Interaction
10	CS6601 - Distributed Systems
11	CS6501 - Internet Programming
12	CS6402 - Design and Analysis of Algorithms
13	CS6704 - Resource Management Techniques
14	CS6502 - Object Oriented Analysis and Design
15	CS6504 - Computer Graphics
16	CS6201 - Digital Principles and System Design



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OBJECTIVES:

The student should be made to:

- Be familiar with the basics of C programming language.
- Be exposed to the concepts of ADTs
- Learn linear data structures - list, stack, and queue.
- Be exposed to sorting, searching, hashing algorithms

UNIT I C PROGRAMMING FUNDAMENTALS- A REVIEW

9

Conditional statements – Control statements – Functions – Arrays – Preprocessor – Pointers – Variation in pointer declarations – Function Pointers – Function with Variable number of arguments

UNIT II C PROGRAMMING ADVANCED FEATURES

9

Structures and Unions - File handling concepts – File read – write – binary and Stdio - File Manipulations

UNIT III LINEAR DATA STRUCTURES – LIST

9

Abstract Data Types (ADTs) – List ADT - array-based implementation - linked list implementation – singly linked lists- circularly linked lists- doubly-linked lists - applications of lists -Polynomial Manipulation - All operation (Insertion, Deletion, Merge, Traversal)

UNIT IV LINEAR DATA STRUCTURES – STACKS, QUEUES

9

Stack ADT - Evaluating arithmetic expressions- other applications- Queue ADT - circular queue implementation - Double ended Queues - applications of queues

UNIT V SORTING, SEARCHING AND HASH TECHNIQUES

9

Sorting algorithms: Insertion sort - Selection sort - Shell sort - Bubble sort - Quick sort - Merge sort - Radix sort – Searching: Linear search -Binary Search Hashing: Hash Functions – Separate Chaining - Open Addressing - Rehashing - Extendible Hashing.

TOTAL: 45 PERIODS

OUTCOMES:

At the end of the course, the student should be able to:

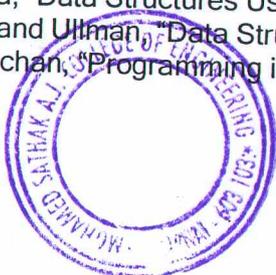
- Use the control structures of C appropriately for problems.
- Implement abstract data types for linear data structures.
- Apply the different linear data structures to problem solutions.
- Critically analyse the various algorithms.

TEXT BOOKS:

1. Brian W. Kernighan and Dennis M. Ritchie, "The C Programming Language", 2nd Edition, Pearson Education, 1988.
2. Mark Allen Weiss, "Data Structures and Algorithm Analysis in C", 2nd Edition, Pearson Education, 1997.

REFERENCES:

1. Thomas H. Cormen, Charles E. Leiserson, Ronald L. Rivest, Clifford Stein, "Introduction to Algorithms", Second Edition, Mcgraw Hill, 2002.
2. Reema Thareja, "Data Structures Using C", Oxford University Press, 2011
3. Aho, Hopcroft and Ullman, "Data Structures and Algorithms", Pearson Education, 1983.
4. Stephen G. Kochan, "Programming in C", 3rd edition, Pearson Ed.,



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OBJECTIVES:

The student should be made to:

- Be familiar with the C++ concepts of abstraction, encapsulation, constructor, polymorphism, overloading and Inheritance.
- Learn advanced nonlinear data structures.
- Be exposed to graph algorithms
- Learn to apply Tree and Graph structures

UNIT I OBJECT ORIENTED PROGRAMMING FUNDAMENTALS

9

C++ Programming features - Data Abstraction - Encapsulation - class - object - constructors - static members - constant members - member functions - pointers - references - Role of this pointer - Storage classes - function as arguments.

UNIT II OBJECT ORIENTED PROGRAMMING CONCEPTS

9

String Handling - Copy Constructor - Polymorphism - compile time and run time polymorphisms - function overloading - operators overloading - dynamic memory allocation - Nested classes - Inheritance - virtual functions.

UNIT III C++ PROGRAMMING ADVANCED FEATURES

9

Abstract class - Exception handling - Standard libraries - Generic Programming - templates - class template - function template - STL - containers - iterators - function adaptors - allocators - Parameterizing the class - File handling concepts.

UNIT IV ADVANCED NON-LINEAR DATA STRUCTURES

9

AVL trees - B-Trees - Red-Black trees - Splay trees - Binomial Heaps - Fibonacci Heaps - Disjoint Sets - Amortized Analysis - accounting method - potential method - aggregate analysis.

UNIT V GRAPHS

9

Representation of Graphs - Breadth-first search - Depth-first search - Topological sort - Minimum Spanning Trees - Kruskal and Prim algorithm - Shortest path algorithm - Dijkstra's algorithm - Bellman-Ford algorithm - Floyd - Warshall algorithm.

TOTAL: 45 PERIODS**OUTCOMES:**

At the end of the course, the student should be able to:

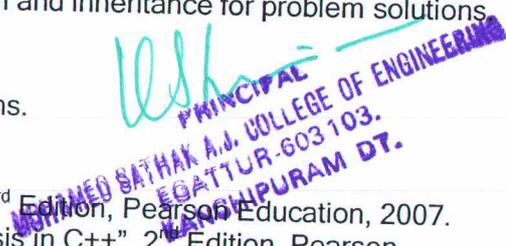
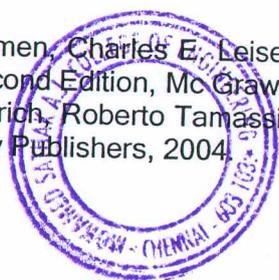
- Design problem solutions using Object Oriented Techniques.
- Apply the concepts of data abstraction, encapsulation and inheritance for problem solutions
- Use the control structures of C++ appropriately.
- Critically analyse the various algorithms.
- Apply the different data structures to problem solutions.

TEXT BOOKS:

1. Bjarne Stroustrup, "The C++ Programming Language", 3rd Edition, Pearson Education, 2007.
2. Mark Allen Weiss, "Data Structures and Algorithm Analysis in C++", 2nd Edition, Pearson Education, 2005

REFERENCES:

1. Thomas H. Cormen, Charles E. Leiserson, Ronald L. Rivest and Clifford Stein, "Introduction to Algorithms", Second Edition, Mc Graw Hill, 2002.
2. Michael T Goodrich, Roberto Tamassia, David Mount, "Data Structures and Algorithms in C++", 7th Edition, Wiley Publishers, 2004.



OBJECTIVES:

The student should be made to:

- Understand the foundations of CLR execution.
- Learn the technologies of the .NET framework.
- Know the object oriented aspects of C#.
- Be aware of application development in .NET.
- Learn web based applications on .NET (ASP.NET).

UNIT I INTRODUCTION TO C#

9

Introducing C#, Understanding .NET, overview of C#, Literals, Variables, Data Types, Operators, checked and unchecked operators, Expressions, Branching, Looping, Methods, implicit and explicit casting, Constant, Arrays, Array Class, Array List, String, String Builder, Structure, Enumerations, boxing and unboxing.

UNIT II OBJECT ORIENTED ASPECTS OF C#

9

Class, Objects, Constructors and its types, inheritance, properties, indexers, index overloading, polymorphism, sealed class and methods, interface, abstract class, abstract and interface, operator overloading, delegates, events, errors and exception, Threading.

UNIT III APPLICATION DEVELOPMENT ON .NET

9

Building windows application, Creating our own window forms with events and controls, menu creation, inheriting window forms, SDI and MDI application, Dialog Box (Modal and Modeless), accessing data with ADO.NET, DataSet, typed dataset, Data Adapter, updating database using stored procedures, SQL Server with ADO.NET, handling exceptions, validating controls, windows application configuration.

UNIT IV WEB BASED APPLICATION DEVELOPMENT ON .NET

9

Programming web application with web forms, ASP.NET introduction, working with XML and .NET, Creating Virtual Directory and Web Application, session management techniques, web.config, web services, passing datasets, returning datasets from web services, handling transaction, handling exceptions, returning exceptions from SQL Server.

UNIT V CLR AND .NET FRAMEWORK

9

Assemblies, Versioning, Attributes, reflection, viewing meta data, type discovery, reflection on type, marshalling, remoting, security in .NET

OUTCOMES:

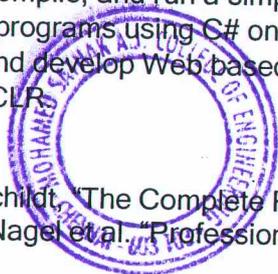
TOTAL: 45 PERIODS

After completing this course, the student will be able to:

- List the major elements of the .NET framework
- Explain how C# fits into the .NET platform.
- Analyze the basic structure of a C# application
- Debug, compile, and run a simple application.
- Develop programs using C# on .NET
- Design and develop Web based applications on .NET
- Discuss CLR

TEXT BOOKS:

1. Herbert Schildt, "The Complete Reference: C# 4.0", Tata Mc Graw Hill, 2012.
2. Christian Nagel et al. "Professional C# 2012 with .NET 4.5", Wiley India, 2012.



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OBJECTIVES:

The student should be made to:

- Understand how Grid computing helps in solving large scale scientific problems.
- Gain knowledge on the concept of virtualization that is fundamental to cloud computing.
- Learn how to program the grid and the cloud.
- Understand the security issues in the grid and the cloud environment.

UNIT I INTRODUCTION

9

Evolution of Distributed computing: Scalable computing over the Internet - Technologies for network based systems - clusters of cooperative computers - Grid computing Infrastructures - cloud computing - service oriented architecture - Introduction to Grid Architecture and standards - Elements of Grid - Overview of Grid Architecture.

UNIT II GRID SERVICES

9

Introduction to Open Grid Services Architecture (OGSA) - Motivation - Functionality Requirements - Practical & Detailed view of OGSA/OGSI - Data intensive grid service models - OGSA services.

UNIT III VIRTUALIZATION

9

Cloud deployment models: public, private, hybrid, community - Categories of cloud computing: Everything as a service: Infrastructure, platform, software - Pros and Cons of cloud computing - Implementation levels of virtualization - virtualization structure - virtualization of CPU, Memory and I/O devices - virtual clusters and Resource Management - Virtualization for data center automation.

UNIT IV PROGRAMMING MODEL

9

Open source grid middleware packages - Globus Toolkit (GT4) Architecture , Configuration - Usage of Globus - Main components and Programming model - Introduction to Hadoop Framework - Mapreduce, Input splitting, map and reduce functions, specifying input and output parameters, configuring and running a job - Design of Hadoop file system, HDFS concepts, command line and java interface, dataflow of File read & File write.

UNIT V SECURITY

9

Trust models for Grid security environment - Authentication and Authorization methods - Grid security infrastructure - Cloud Infrastructure security: network, host and application level - aspects of data security, provider data and its security, Identity and access management architecture, IAM practices in the cloud, SaaS, PaaS, IaaS availability in the cloud, Key privacy issues in the cloud.

OUTCOMES:

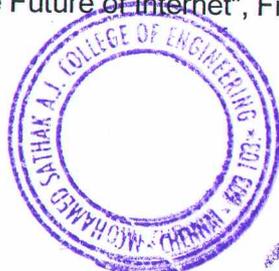
At the end of the course, the student should be able to:

- Apply grid computing techniques to solve large scale scientific problems.
- Apply the concept of virtualization.
- Use the grid and cloud tool kits.
- Apply the security models in the grid and the cloud environment.

TOTAL: 45 PERIODS

TEXT BOOK:

1. Kai Hwang, Geoffery C. Fox and Jack J. Dongarra, "Distributed and Cloud Computing: Clusters, Grids, Clouds and the Future of Internet", First Edition, Morgan Kaufman Publisher, an Imprint of Elsevier, 2012.



OBJECTIVES:

- To expose the students to the fundamentals of Database Management Systems.
- To make the students understand the relational model.
- To familiarize the students with ER diagrams.
- To expose the students to SQL.
- To make the students to understand the fundamentals of Transaction Processing and Query Processing.
- To familiarize the students with the different types of databases.
- To make the students understand the Security Issues in Databases.

UNIT I INTRODUCTION TO DBMS

10

File Systems Organization - Sequential, Pointer, Indexed, Direct - Purpose of Database System- Database System Terminologies-Database characteristics- Data models - Types of data models - Components of DBMS- Relational Algebra. LOGICAL DATABASE DESIGN: Relational DBMS - Codd's Rule - Entity-Relationship model - Extended ER Normalization - Functional Dependencies, Anomaly- 1NF to 5NF- Domain Key Normal Form - Denormalization

UNIT II SQL & QUERY OPTIMIZATION

8

SQL Standards - Data types - Database Objects- DDL-DML-DCL-TCL-Embedded SQL-Static Vs Dynamic SQL - QUERY OPTIMIZATION: Query Processing and Optimization - Heuristics and Cost Estimates in Query Optimization.

UNIT III TRANSACTION PROCESSING AND CONCURRENCY CONTROL

8

Introduction-Properties of Transaction- Serializability- Concurrency Control - Locking Mechanisms- Two Phase Commit Protocol-Dead lock.

UNIT IV TRENDS IN DATABASE TECHNOLOGY

10

Overview of Physical Storage Media - Magnetic Disks - RAID - Tertiary storage - File Organization - Organization of Records in Files - Indexing and Hashing -Ordered Indices - B+ tree Index Files - B tree Index Files - Static Hashing - Dynamic Hashing - Introduction to Distributed Databases- Client server technology- Multidimensional and Parallel databases- Spatial and multimedia databases- Mobile and web databases- Data Warehouse-Mining- Data marts.

UNIT V ADVANCED TOPICS

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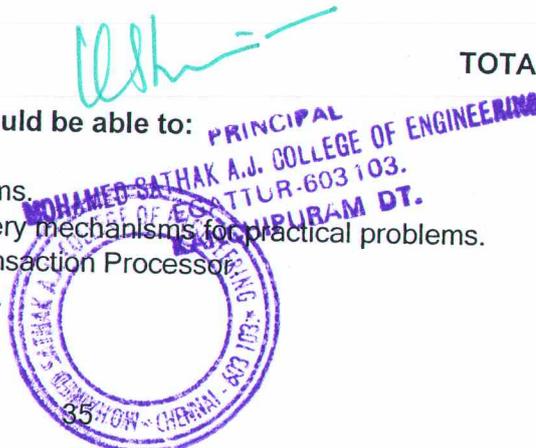
DATABASE SECURITY: Data Classification-Threats and risks - Database access Control - Types of Privileges -Cryptography- Statistical Databases.- Distributed Databases-Architecture-Transaction Processing-Data Warehousing and Mining-Classification-Association rules-Clustering-Information Retrieval- Relevance ranking-Crawling and Indexing the Web- Object Oriented Databases-XML Databases.

OUTCOMES:

TOTAL: 45 PERIODS

At the end of the course, the student should be able to:

- Design Databases for applications.
- Use the Relational model, ER diagrams.
- Apply concurrency control and recovery mechanisms for practical problems.
- Design the Query Processor and Transaction Processor
- Apply security concepts to databases.



OBJECTIVES:

The student should be made to:

- Understand the division of network functionalities into layers.
- Be familiar with the components required to build different types of networks
- Be exposed to the required functionality at each layer
- Learn the flow control and congestion control algorithms

UNIT I FUNDAMENTALS & LINK LAYER

9

Building a network - Requirements - Layering and protocols - Internet Architecture - Network software - Performance ; Link layer Services - Framing - Error Detection - Flow control

UNIT II MEDIA ACCESS & INTERNETWORKING

9

Media access control - Ethernet (802.3) - Wireless LANs - 802.11 - Bluetooth - Switching and bridging - Basic Internetworking (IP, CIDR, ARP, DHCP, ICMP)

UNIT III ROUTING

9

Routing (RIP, OSPF, metrics) - Switch basics - Global Internet (Areas, BGP, IPv6), Multicast - addresses - **multicast routing** (DVMRP, PIM)

UNIT IV TRANSPORT LAYER

9

Overview of Transport layer - UDP - Reliable byte stream (TCP) - Connection management - Flow control - Retransmission - **TCP Congestion control** - Congestion avoidance (DECbit, RED) - QoS - Application requirements

UNIT V APPLICATION LAYER

9

Traditional applications - Electronic Mail (SMTP, POP3, IMAP, MIME) - HTTP - Web Services - DNS - **SNMP**

TOTAL: 45 PERIODS**OUTCOMES:**

At the end of the course, the student should be able to:

- Identify the components required to build different types of networks
- Choose the required functionality at each layer for given application
- Identify solution for each functionality at each layer
- Trace the flow of information from one node to another node in the network

TEXT BOOK:

1. Larry L. Peterson, Bruce S. Davie, "Computer Networks: A Systems Approach", Fifth Edition, Morgan Kaufmann Publishers, 2011.

REFERENCES:

1. James F. Kurose, Keith W. Ross, "Computer Networking - A Top-Down Approach Featuring the Internet", Fifth Edition, Pearson Education, 2009.
2. Nader. F. Mir, "Computer and Communication Networks", Pearson Prentice Hall Publishers, 2010.
3. Ying-Dar Lin, Ren-Hung Hwang, Fred Baker, "Computer Networks: An Open Source Approach", Mc Graw Hill Publisher, 2011.
4. Behrouz A. Forouzan, "Data communication and Networking", Fourth Edition, Tata McGraw - Hill, 2011.



OBJECTIVES:

The student should be made to:

- Learn the algorithm analysis techniques.
- Become familiar with the different algorithm design techniques.
- Understand the limitations of Algorithm power.

UNIT I INTRODUCTION

9

Notion of an Algorithm - Fundamentals of Algorithmic Problem Solving - Important Problem Types - Fundamentals of the Analysis of Algorithm Efficiency - Analysis Framework - Asymptotic Notations and its properties - Mathematical analysis for Recursive and Non-recursive algorithms.

UNIT II BRUTE FORCE AND DIVIDE-AND-CONQUER

9

Brute Force - Closest-Pair and Convex-Hull Problems-Exhaustive Search - Traveling Salesman Problem - Knapsack Problem - Assignment problem.

Divide and conquer methodology - Merge sort - Quick sort - Binary search - Multiplication of Large Integers - Strassen's Matrix Multiplication-Closest-Pair and Convex-Hull Problems.

UNIT III DYNAMIC PROGRAMMING AND GREEDY TECHNIQUE

9

Computing a Binomial Coefficient - Warshall's and Floyd's algorithm - Optimal Binary Search Trees - Knapsack Problem and Memory functions. Greedy Technique- Prim's algorithm- Kruskal's Algorithm- Dijkstra's Algorithm-Huffman Trees.

UNIT IV ITERATIVE IMPROVEMENT

9

The Simplex Method-The Maximum-Flow Problem - Maximum Matching in Bipartite Graphs- The Stable marriage Problem.

UNIT V COPING WITH THE LIMITATIONS OF ALGORITHM POWER

9

Limitations of Algorithm Power-Lower-Bound Arguments-Decision Trees-P, NP and NP-Complete Problems--Coping with the Limitations - Backtracking - n-Queens problem - Hamiltonian Circuit Problem - Subset Sum Problem-Branch and Bound - Assignment problem - Knapsack Problem - Traveling Salesman Problem- Approximation Algorithms for NP - Hard Problems - Traveling Salesman problem - Knapsack problem.

TOTAL: 45 PERIODS

OUTCOMES:

At the end of the course, the student should be able to:

- Design algorithms for various computing problems.
- Analyze the time and space complexity of algorithms.
- Critically analyze the different algorithm design techniques for a given problem.
- Modify existing algorithms to improve efficiency.

TEXT BOOK:

1. Anany Levitin, "Introduction to the Design and Analysis of Algorithms", Third Edition, Pearson Education, 2012.

REFERENCES:

1. Thomas H.Cormen, Charles E. Leiserson, Ronald L. Rivest and Clifford Stein, "Introduction to Algorithms", Third Edition, PHI Learning Private Limited, 2012.



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OBJECTIVES:

The student should be made to:

- Learn Java Programming.
- Understand different Internet Technologies.
- Be exposed to java specific web services architecture.

UNIT I JAVA PROGRAMMING

9

An overview of Java – Data Types – Variables and Arrays – Operators – Control Statements – Classes – Objects – Methods – Inheritance – Packages – Abstract classes – Interfaces and Inner classes – Exception handling – Introduction to Threads – Multithreading – String handling – Streams and I/O – Applets.

UNIT II WEBSITES BASICS, HTML 5, CSS 3, WEB 2.0

8

Web 2.0: Basics-RIA Rich Internet Applications - Collaborations tools - **Understanding websites and web servers:** Understanding Internet – Difference between websites and web server- Internet technologies Overview -Understanding the difference between internet and intranet; **HTML and CSS:** HTML 5.0 , XHTML, CSS 3.

UNIT III CLIENT SIDE AND SERVER SIDE PROGRAMMING

11

Java Script: An introduction to JavaScript-JavaScript DOM Model-Date and Objects,-Regular Expressions- Exception Handling-Validation-Built-in objects-Event Handling- DHTML with JavaScript. **Servlets:** Java Servlet Architecture- Servlet Life Cycle- Form GET and POST actions- Session Handling- Understanding Cookies- Installing and Configuring Apache Tomcat Web Server;- **DATABASE CONNECTIVITY:** JDBC perspectives, JDBC program example - **JSP:** Understanding Java Server Pages-JSP Standard Tag Library(JSTL)-Creating HTML forms by embedding JSP code.

UNIT IV PHP and XML

8

An introduction to PHP: PHP- Using PHP- Variables- Program control- Built-in functions-Connecting to Database – Using Cookies-Regular Expressions; **XML:** Basic XML- Document Type Definition- XML Schema DOM and Presenting XML, XML Parsers and Validation, XSL and XSLT Transformation, News Feed (RSS and ATOM).

UNIT V INTRODUCTION TO AJAX and WEB SERVICES

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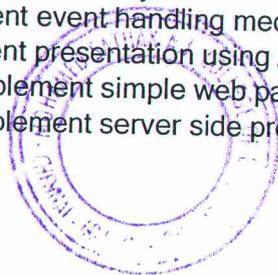
AJAX: Ajax Client Server Architecture-XML Http Request Object-Call Back Methods; **Web Services:** Introduction- Java web services Basics – Creating, Publishing ,Testing and Describing a Web services (WSDL)-Consuming a web service, Database Driven web service from an application – SOAP.

TOTAL (L:45+T:15): 60 PERIODS

OUTCOMES:

At the end of the course, the student should be able to:

- Implement Java programs.
- Create a basic website using HTML and Cascading Style Sheets.
- Design and implement dynamic web page with validation using JavaScript objects and by applying different event handling mechanisms.
- Design rich client presentation using AJAX.
- Design and implement simple web page in PHP, and to present data in XML format.
- Design and implement server side programs using Servlets and JSP.



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OBJECTIVES:

The student should be made to:

- Learn the basics of OO analysis and design skills.
- Learn the UML design diagrams.
- Learn to map design to code.
- Be exposed to the various testing techniques.

UNIT I UML DIAGRAMS

9

Introduction to OOAD - Unified Process - UML diagrams - Use Case - Class Diagrams- Interaction Diagrams - State Diagrams - Activity Diagrams - Package, component and Deployment Diagrams.

UNIT II DESIGN PATTERNS

9

GRASP: Designing objects with responsibilities - Creator - Information expert - Low Coupling - High Cohesion - Controller - Design Patterns - creational - factory method - structural - Bridge - Adapter - behavioral - Strategy - observer.

UNIT III CASE STUDY

9

Case study - the Next Gen POS system, Inception -Use case Modeling - Relating Use cases - include, extend and generalization - Elaboration - Domain Models - Finding conceptual classes and description classes - Associations - Attributes - Domain model refinement - Finding conceptual class Hierarchies - Aggregation and Composition.

UNIT IV APPLYING DESIGN PATTERNS

9

System sequence diagrams - Relationship between sequence diagrams and use cases Logical architecture and UML package diagram - Logical architecture refinement - UML class diagrams - UML interaction diagrams - Applying GoF design patterns.

UNIT V CODING AND TESTING

9

Mapping design to code - Testing: Issues in OO Testing - Class Testing - OO Integration Testing - GUI Testing - OO System Testing.

TOTAL: 45 PERIODS**OUTCOMES:**

At the end of the course, the student should be able to:

- Design and implement projects using OO concepts.
- Use the UML analysis and design diagrams.
- Apply appropriate design patterns.
- Create code from design.
- Compare and contrast various testing techniques.

TEXT BOOK:

1. Craig Larman, "Applying UML and Patterns: An Introduction to Object Oriented Analysis and Design and Iterative Development", Third Edition, Pearson Education, 2005.

REFERENCES:

1. Simon Bennett, Steve Mc Robb and Ray Farmer, "Object Oriented Systems Analysis and Design Using UML", Fourth Edition, Mc-Graw Hill Education, 2010.
2. Erich Gamma, and Richard Helm, Ralph Johnson, John Vlissides, "Design patterns: Elements of Reusable Object-Oriented Software", Addison-Wesley, 1995.
3. Martin Fowler, "UML Distilled. A Brief Guide to the Standard Object Modeling Language", Third edition, Addison Wesley, 2003.



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OBJECTIVES:

The student should be made to:

- Gain knowledge about graphics hardware devices and software used.
- Understand the two dimensional graphics and their transformations.
- Understand the three dimensional graphics and their transformations.
- Appreciate illumination and color models.
- Be familiar with understand clipping techniques.

UNIT I INTRODUCTION

9

Survey of computer graphics, Overview of graphics systems – Video display devices, Raster scan systems, Random scan systems, Graphics monitors and Workstations, Input devices, Hard copy Devices, Graphics Software; Output primitives - points and lines, line drawing algorithms, loading the frame buffer, line function; circle and ellipse generating algorithms; Pixel addressing and object geometry, filled area primitives.

UNIT II TWO DIMENSIONAL GRAPHICS

9

Two dimensional geometric transformations - Matrix representations and homogeneous coordinates, composite transformations; Two dimensional viewing - viewing pipeline, viewing coordinate reference frame; widow-to-viewport coordinate transformation, Two dimensional viewing functions; clipping operations - point, line, and polygon clipping algorithms.

UNIT III THREE DIMENSIONAL GRAPHICS

10

Three dimensional concepts; Three dimensional object representations - Polygon surfaces- Polygon tables- Plane equations - Polygon meshes; Curved Lines and surfaces, Quadratic surfaces; Blobby objects; Spline representations - Bezier curves and surfaces -B-Spline curves and surfaces. TRANSFORMATION AND VIEWING: Three dimensional geometric and modeling transformations - Translation, Rotation, Scaling, composite transformations; Three dimensional viewing - viewing pipeline, viewing coordinates, Projections, Clipping; Visible surface detection methods.

UNIT IV ILLUMINATION AND COLOUR MODELS

7

Light sources - basic illumination models – halftone patterns and dithering techniques; Properties of light - Standard primaries and chromaticity diagram; Intuitive colour concepts - RGB colour model - YIQ colour model - CMY colour model - HSV colour model - HLS colour model; Colour selection.

UNIT V ANIMATIONS & REALISM

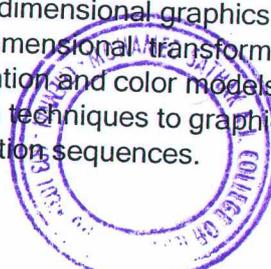
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ANIMATION GRAPHICS: Design of Animation sequences - animation function - raster animation - key frame systems - motion specification -morphing - tweening. **COMPUTER GRAPHICS REALISM:** Tiling the plane - Recursively defined curves - Koch curves - C curves - Dragons - space filling curves - fractals - Grammar based models - fractals - turtle graphics - ray tracing.

OUTCOMES:**TOTAL: 45 PERIODS**

At the end of the course, the student should be able to:

- Design two dimensional graphics.
- Apply two dimensional transformations.
- Design three dimensional graphics.
- Apply three dimensional transformations.
- Apply Illumination and color models.
- Apply clipping techniques to graphics.
- Design animation sequences.



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OBJECTIVES:

The student should be made to:

- Understand foundations of Distributed Systems.
- Introduce the idea of peer to peer services and file system.
- Understand in detail the system level and support required for distributed system.
- Understand the issues involved in studying process and resource management.

UNIT I INTRODUCTION

7

Examples of Distributed Systems-Trends in Distributed Systems - Focus on resource sharing - Challenges. **Case study:** World Wide Web.

UNIT II COMMUNICATION IN DISTRIBUTED SYSTEM

10

System Model - Inter process Communication - the API for internet protocols - External data representation and Multicast communication. **Network virtualization:** Overlay networks. **Case study:** MPI Remote Method Invocation And Objects: Remote Invocation - Introduction - Request-reply protocols - Remote procedure call - Remote method invocation. **Case study:** Java RMI - Group communication - Publish-subscribe systems - Message queues - Shared memory approaches - Distributed objects - Case study: Enterprise Java Beans -from objects to components.

UNIT III PEER TO PEER SERVICES AND FILE SYSTEM

10

Peer-to-peer Systems - Introduction - Napster and its legacy - Peer-to-peer - Middleware - Routing overlays. **Overlay case studies:** Pastry, Tapestry- Distributed File Systems -Introduction - File service architecture - Andrew File system. **File System:** Features-File model -File accessing models - File sharing semantics **Naming:** Identifiers, Addresses, Name Resolution - Name Space Implementation - Name Caches - LDAP.

UNIT IV SYNCHRONIZATION AND REPLICATION

9

Introduction - Clocks, events and process states - Synchronizing physical clocks- Logical time and logical clocks - Global states - Coordination and Agreement - Introduction - Distributed mutual exclusion - Elections - Transactions and Concurrency Control- Transactions -Nested transactions - Locks - Optimistic concurrency control - **Timestamp ordering** - Atomic Commit protocols -Distributed deadlocks - Replication - Case study - Coda.

UNIT V PROCESS & RESOURCE MANAGEMENT

9

Process Management: Process Migration: Features, Mechanism - Threads: Models, Issues, Implementation. **Resource Management:** Introduction- Features of Scheduling Algorithms -Task Assignment Approach - **Load Balancing Approach** - Load Sharing Approach.

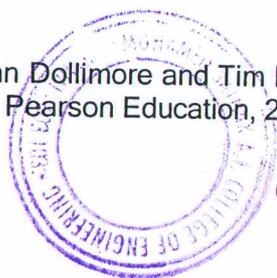
TOTAL: 45 PERIODS**OUTCOMES:**

At the end of the course, the student should be able to:

- Discuss trends in Distributed Systems.
- Apply network virtualization.
- Apply remote method invocation and objects.
- Design process and resource management systems.

TEXT BOOK:

1. George Coulouris, Jean Dollimore and Tim Kindberg, "Distributed Systems Concepts and Design", Fifth Edition, Pearson Education, 2012.



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OBJECTIVES:

The student should be made to:

- Study the concepts of Artificial Intelligence.
- Learn the methods of solving problems using Artificial Intelligence.
- Introduce the concepts of Expert Systems and machine learning.

UNIT I INTRODUCTION TO AI AND PRODUCTION SYSTEMS

9

Introduction to AI-Problem formulation, Problem Definition -Production systems, Control strategies, Search strategies. Problem characteristics, Production system characteristics -Specialized production system- Problem solving methods - Problem graphs, Matching, Indexing and Heuristic functions -Hill Climbing-Depth first and Breath first, Constraints satisfaction - Related algorithms, Measure of performance and analysis of search algorithms.

UNIT II REPRESENTATION OF KNOWLEDGE

9

Game playing - Knowledge representation, Knowledge representation using Predicate logic, Introduction to predicate calculus, Resolution, Use of predicate calculus, Knowledge representation using other logic-Structured representation of knowledge.

UNIT III KNOWLEDGE INFERENCE

9

Knowledge representation -Production based system, Frame based system. Inference - Backward chaining, Forward chaining, Rule value approach, Fuzzy reasoning - Certainty factors, Bayesian Theory-Bayesian Network-Dempster - Shafer theory.

UNIT IV PLANNING AND MACHINE LEARNING

9

Basic plan generation systems - Strips -Advanced plan generation systems – K strips -Strategic explanations -Why, Why not and how explanations. Learning- Machine learning, adaptive Learning.

UNIT V EXPERT SYSTEMS

9

Expert systems - Architecture of expert systems, Roles of expert systems - Knowledge Acquisition – Meta knowledge, Heuristics. Typical expert systems - MYCIN, DART, XOON, Expert systems shells.

TOTAL: 45 PERIODS**OUTCOMES:**

At the end of the course, the student should be able to:

- Identify problems that are amenable to solution by AI methods.
- Identify appropriate AI methods to solve a given problem.
- Formalise a given problem in the language/framework of different AI methods.
- Implement basic AI algorithms.
- Design and carry out an empirical evaluation of different algorithms on a problem formalisation, and state the conclusions that the evaluation supports.

TEXT BOOKS:

1. Kevin Night and Elaine Rich, Nair B., "Artificial Intelligence (SIE)", Mc Graw Hill-2008.(Units-I,II,VI & V)
2. Dan W. Patterson, "Introduction to AI and ES", Pearson Education, 2007.(Unit-III)

REFERENCES:

1. Peter Jackson, "Introduction to Expert Systems", 3rd Edition, Pearson Education, 2007.
2. Stuart Russel and Peter Norvig "AI - A Modern Approach", 2nd Edition, Pearson Education 2007.
3. Deepak Khemani "Artificial Intelligence", Tata Mc Graw Hill Education 2013.



OBJECTIVES:

The student should be made to:

- Understand OSI security architecture and classical encryption techniques.
- Acquire fundamental knowledge on the concepts of finite fields and number theory.
- Understand various block cipher and stream cipher models.
- Describe the principles of public key cryptosystems, hash functions and digital signature.

UNIT I INTRODUCTION & NUMBER THEORY

10

Services, Mechanisms and attacks-the OSI security architecture-Network security model-Classical Encryption techniques (Symmetric cipher model, substitution techniques, transposition techniques, steganography).FINITE FIELDS AND NUMBER THEORY: Groups, Rings, Fields-Modular arithmetic-Euclid"s algorithm-Finite fields- Polynomial Arithmetic -Prime numbers-Fermat"s and Euler"s theorem-Testing for primality -The Chinese remainder theorem- Discrete logarithms.

UNIT II BLOCK CIPHERS & PUBLIC KEY CRYPTOGRAPHY

10

Data Encryption Standard-Block cipher principles-block cipher modes of operation-Advanced Encryption Standard (AES)-Triple DES-Blowfish-RC5 algorithm. **Public key cryptography:** Principles of public key cryptosystems-The RSA algorithm-Key management - Diffie Hellman Key exchange-Elliptic curve arithmetic-Elliptic curve cryptography.

UNIT III HASH FUNCTIONS AND DIGITAL SIGNATURES

8

Authentication requirement - Authentication function - MAC - Hash function - Security of hash function and MAC -MD5 - SHA - HMAC - CMAC - Digital signature and authentication protocols - DSS - El Gamal - Schnorr.

UNIT IV SECURITY PRACTICE & SYSTEM SECURITY

8

Authentication applications - Kerberos - X.509 Authentication services - Internet Firewalls for Trusted System: Roles of Firewalls - Firewall related terminology- Types of Firewalls - Firewall designs - SET for E-Commerce Transactions. Intruder - Intrusion detection system - Virus and related threats - Countermeasures - Firewalls design principles - Trusted systems - Practical implementation of cryptography and security.

UNIT V E-MAIL, IP & WEB SECURITY

9

E-mail Security: Security Services for E-mail-attacks possible through E-mail - establishing keys privacy-authentication of the source-Message Integrity-Non-repudiation-Pretty Good Privacy-S/MIME. **IPSecurity:** Overview of IPSec - IP and IPv6-Authentication Header-Encapsulation Security Payload (ESP)-Internet Key Exchange (Phases of IKE, ISAKMP/IKE Encoding). **Web Security:** SSL/TLS Basic Protocol-computing the keys- client authentication-PKI as deployed by SSLAttacks fixed in v3-Exportability-Encoding-Secure Electronic Transaction (SET).

TOTAL: 45 PERIODS**OUTCOMES:**

Upon Completion of the course, the students should be able to:

- Compare various Cryptographic Techniques
- Design Secure applications
- Inject secure coding in the developed applications



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OBJECTIVES:

The student should be made to:

- Be familiar with resource management techniques.
- Learn to solve problems in linear programming and Integer programming.
- Be exposed to CPM and PERT.

UNIT I LINEAR PROGRAMMING

9

Principal components of decision problem - Modeling phases - LP Formulation and graphic solution - Resource allocation problems - Simplex method - Sensitivity analysis.

UNIT II DUALITY AND NETWORKS

9

Definition of dual problem - Primal - Dual relations - Dual simplex methods - Post optimality analysis - Transportation and assignment model - Shortest route problem.

UNIT III INTEGER PROGRAMMING

9

Cutting plan algorithm - Branch and bound methods, Multistage (Dynamic) programming.

UNIT IV CLASSICAL OPTIMISATION THEORY:

9

Unconstrained external problems, Newton - Raphson method - Equality constraints - Jacobean methods - Lagrangian method - Kuhn - Tucker conditions - Simple problems.

UNIT V OBJECT SCHEDULING:

9

Network diagram representation - Critical path method - Time charts and resource leveling - PERT.

TOTAL: 45 PERIODS**OUTCOMES:**

Upon Completion of the course, the students should be able to:

- Solve optimization problems using simplex method.
- Apply integer programming and linear programming to solve real-life applications.
- Use PERT and CPM for problems in project management

TEXT BOOK:

1. H.A. Taha, "Operation Research", Prentice Hall of India, 2002.

REFERENCES:

1. Paneer Selvam, „Operations Research“, Prentice Hall of India, 2002
2. Anderson „Quantitative Methods for Business“, 8th Edition, Thomson Learning, 2002.
3. Winston „Operation Research“, Thomson Learning, 2003.
4. Vohra, „Quantitative Techniques in Management“, Tata Mc Graw Hill, 2002.
5. Anand Sarma, „Operation Research“, Himalaya Publishing House, 2003.



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OBJECTIVES:

The student should be made to:

- Learn the foundations of Human Computer Interaction.
- Be familiar with the design technologies for individuals and persons with disabilities.
- Be aware of mobile HCI.
- Learn the guidelines for user interface.

UNIT I FOUNDATIONS OF HCI

9

The Human: I/O channels - Memory - Reasoning and problem solving; The computer: Devices - Memory - processing and networks; Interaction: Models - frameworks - Ergonomics - styles - elements - interactivity- Paradigms.

UNIT II DESIGN & SOFTWARE PROCESS

9

Interactive Design basics - process - scenarios - navigation - screen design - Iteration and prototyping. HCI in software process - software life cycle - usability engineering - Prototyping in practice - design rationale. Design rules - principles, standards, guidelines, rules. Evaluation Techniques - Universal Design.

UNIT III MODELS AND THEORIES

9

Cognitive models -Socio-Organizational issues and stake holder requirements -Communication and collaboration models-Hypertext, Multimedia and WWW.

UNIT IV MOBILE HCI

9

Mobile Ecosystem: Platforms, Application frameworks- Types of Mobile Applications: Widgets, Applications, Games- Mobile Information Architecture, Mobile 2.0, Mobile Design: Elements of Mobile Design, Tools.

UNIT V WEB INTERFACE DESIGN

9

Designing Web Interfaces - Drag & Drop, Direct Selection, Contextual Tools, Overlays, Inlays and Virtual Pages, Process Flow. Case Studies.

L: 45, T: 0, TOTAL: 45 PERIODS

OUTCOMES:

Upon completion of the course, the student should be able to:

- Design effective dialog for HCI.
- Design effective HCI for individuals and persons with disabilities.
- Assess the importance of user feedback.
- Explain the HCI implications for designing multimedia/ ecommerce/ e-learning Web sites.
- Develop meaningful user interface.

TEXT BOOKS:

1. Alan Dix, Janet Finlay, Gregory Abowd, Russell Beale, "Human Computer Interaction", 3rd Edition, Pearson Education, 2004 (UNIT I , II & III).
2. Brian Fling, "Mobile Design and Development", First Edition , O'Reilly Media Inc., 2009 (UNIT -IV).
3. Bill Scott and Theresa Neil, "Designing Web Interfaces", First Edition, O'Reilly, 2009.(UNIT-V).



OBJECTIVES:

- To introduce discrete Fourier transform and its applications.
- To teach the design of infinite and finite impulse response filters for filtering undesired signals.
- To introduce signal processing concepts in systems having more than one sampling frequency.

UNIT I SIGNALS AND SYSTEMS

9

Basic elements of DSP - concepts of frequency in Analog and Digital Signals - sampling theorem - Discrete - time signals, systems - Analysis of discrete time LTI systems - Z transform - Convolution - Correlation.

UNIT II FREQUENCY TRANSFORMATIONS

9

Introduction to DFT - Properties of DFT - Circular Convolution - Filtering methods based on DFT - FFT Algorithms - Decimation - in - time Algorithms, Decimation - in - frequency Algorithms - Use of FFT in Linear Filtering - DCT - Use and Application of DCT.

UNIT III IIR FILTER DESIGN

9

Structures of IIR - Analog filter design - Discrete time IIR filter from analog filter - IIR filter design by Impulse Invariance, Bilinear transformation, Approximation of derivatives - (LPF, HPF, BPF, BRF) filter design using frequency translation.

UNIT IV FIR FILTER DESIGN

9

Structures of FIR - Linear phase FIR filter - Fourier Series - Filter design using windowing techniques (Rectangular Window, Hamming Window, Hanning Window), Frequency sampling techniques

UNIT V FINITE WORD LENGTH EFFECTS IN DIGITAL FILTERS

9

Binary fixed point and floating point number representations - Comparison - Quantization noise - truncation and rounding - quantization noise power- input quantization error- coefficient quantization error - limit cycle oscillations-dead band- Overflow error-signal scaling.

TOTAL (L:45+T:15): 60 PERIODS

OUTCOMES:

Upon completion of the course, students will be able to:

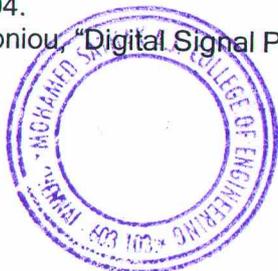
- Perform frequency transforms for the signals.
- Design IIR and FIR filters.
- Finite word length effects in digital filters

TEXT BOOK:

1. John G. Proakis and Dimitris G. Manolakis, "Digital Signal Processing - Principles, Algorithms & Applications", Fourth Edition, Pearson Education, Prentice Hall, 2007.

REFERENCES:

1. Emmanuel C. Ifeachor, and Barrie W. Jervis, "Digital Signal Processing", Second Edition, Pearson Education, Prentice Hall, 2002.
2. Sanjit K. Mitra, "Digital Signal Processing - A Computer Based Approach", Third Edition, Tata Mc Graw Hill, 2007.
3. A.V. Oppenheim, R.W. Schaffer and J.R. Buck, Discrete-Time Signal Processing, 8th Indian Reprint, Pearson, 2004.
4. Andreas Antoniou, "Digital Signal Processing", Tata McGraw Hill, 2006.





**SECURED VOTING: EFFECTIVE & SECURED VOTING SYSTEM
USING FINGER PRINT & MULTI CLOUD**

A PROJECT REPORT

Submitted by

MD NAYEEM (311814104302)

GOPALA KRISHNAN R (311814104502)

In partial fulfilment for the award of the degree

of

BACHELOR OF ENGINEERING



IN

COMPUTER SCIENCE AND ENGINEERING

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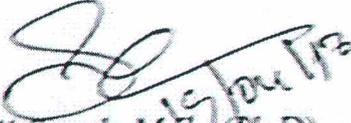
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APRIL 2018

ANNA UNIVERSITY: CHENNAI 600 025

BONAFIDE CERTIFICATE

Certified that this project report titled "SECURED VOTING: EFFECTIVE & SECURED VOTING SYSTEM USING FINGER PRINT&MULTI CLOUD" is the bonafide work of "MD NAYEEM (311814104302), GOPALA KRISHNAN R (311814104502)" who carried out the project work under my supervision.


Mr. K. Suresh, M.E., (Ph.D),
15/04/18

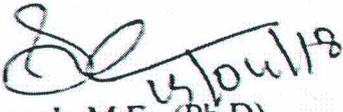
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Submitted for the project viva voice held on 19-4-18


INTERNAL EXAMINER
15/04/18




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ABSTRACT

Every field is emerged into automation and this has to be brought into the current electoral system. The voting system that ensures the balloters with trust and confidence is accuracy which does not allow false voting, the scalability that does not affect process, the mobility that allows the ballotter to vote from any location and the efficiency that reduces the consumption of time due to manual verification of the ballotter.

○ The voting system should be groomed in an evident way by employing Aadhar card and biometric sensor that assures the balloters trust and confidence. A biometric device makes use of automated approach of verifying and recognizing the identity.

○ There are situations where the balloters can't vote in the booth; in such a situation the ballotter can make use of e-voting module in near by booths to cast his/her vote. So far, the result announcement requires man power for counting which can be reduced using cloud storage that gathers votes from all the polling booth.

○ The gathered votes are encrypted from the polling booth and the decryption of data is done by the electoral commission. The proposed work combines the concepts of cloud storage, biometric verification, and security to ensure trustworthy voting.




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CHAPTER 8

CONCLUSION

This projects presents the design and development of a secured voting based on fingerprint and bio-metrics, multi-cloud for storage, diminshing the possibilities of fraud and voter deception. the encryption method diminishes the security loop holes and adorns the system to be more robust ,accurate and efficacious.

As mentioned above, an algorithm is designed to provide a secure data and to provide a trustworthy election amongst the people of the democracy. The percentage of the voting will be increased. In future Aadhar card is the most needed for a person identity hence deploying a election process using it is highly recommendable. The time consumption for casting a vote is reduced comparatively when compared with the current scenarios.




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RATING OF PROS AND CONS BASED ON REVIEW USING SENTIMENT ANALYSIS

A PROJECT REPORT

Submitted by

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APRIL 2018

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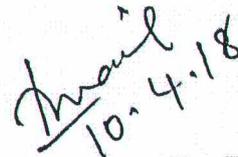
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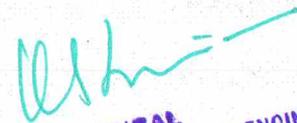
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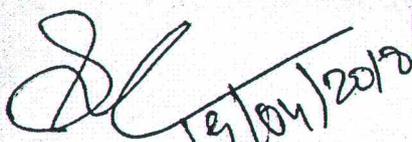
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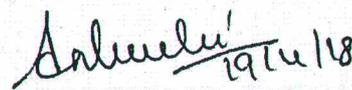
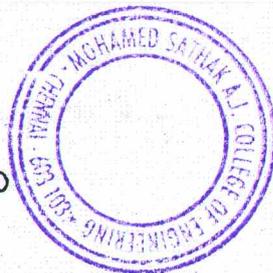
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INTERNAL EXAMINER



EXTERNAL EXAMINER

ABSTRACT

Several consumer reviews of products are now available on the Internet. Consumer reviews contain rich and valuable knowledge for both businesses and users. Before, There are two Existing methods are used in online. They are : **Boolean weighting** and **term frequency (TF)** weighting. Boolean weighting represents each review into a feature vector of Boolean values, each of which indicates the presence or absence of the corresponding feature in the review. Term frequency (TF) weighting weights the Boolean feature by the frequency of each feature on the corpus. In particular, given the consumer reviews of a product, this application first identify product aspects by a narrow dependency parser and determine consumer opinions on these aspects via a **sentiment classifier**. In this paper a product aspect ranking framework to automatically identify the important aspects of products from numerous consumer reviews. This paper demonstrate the potential of aspect ranking in real-world applications. In Existing system, they use bag of words to find whether the given review is positive or negative but they dint find the neutral review In Proposed system, Same bag of words is used, by using this bow they find the product aspects are identified which find all positive and negative and also neutral reviews which was given by the people. Significant performance improvements are obtaine on the applications of document-level setiment and extractive review summarization by making use of aspect ranking. This paper give original ratings for online products based on consumer reviews




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CHAPTER 7

CONCLUSION AND FUTURE ENHANCEMENT

7.1 CONCLUSION

In this project mainly focused for business development for ac-curing the products enhanced for check growth level and assign the ratings to user involvement the product status will intimate to administrator. The rating value play a vital role to recommendation for business need and it get for ratings. The product aspects are finally ranked according to their importance scores. We have conducted extensive experiments to systematically evaluate the proposed framework. The experimental corpus contains 94,560 consumer reviews of 21 popular products in eight domains. This corpus is publicly available by request. Experimental results have demonstrated the effectiveness of the proposed approaches. Moreover, we applied product aspect ranking to facilitate two real world applications, i.e., document level sentiment classification and extractive review summarization. Significant performance improvements have been obtained with the help of product aspect ranking.

7.2 FUTURE ENCHANCEMENT:

In this project, Where buyers or users may rate for the products, using this ratings we are generating a bar graph for the products. It will help the sellers to grow their business and lead to user satisfaction. The Bar Graph will generate also analysis the individual project value assumption.




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**IDENTIFICATION SOCIAL MEDIA ON ONLINE
COMPARISION IN INDIVIDUAL HIGH PROFILE
ACCOUNTS**

A PROJECT REPORT

Submitted by

SHANTHOSHKUMAR J (311814104020)

SABARI A (31141410501)

In partial fulfilment for the award of the degree

of

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APRIL 2018

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BONAFIDE CERTIFICATE

Certified that this project report titled “ **IDENTIFICATION SOCIAL MEDIA ON ONLINE COMPARISON IN INDIVIDUAL HIGH PROFILE ACCOUNTS** ” is the bonafide work of “**SHANTHOSHKUMAR J (311814104020), SABARI A (311814104501)** ” who carried out the project work under my supervision.


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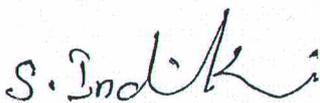
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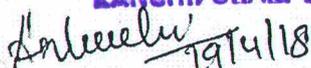
Engineering, Siruseri, Chennai-603103

Submitted for the project viva voice held on

19.04.18




INTERNAL EXAMINER


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EXTERNAL EXAMINER

ABSTRACT

In the existing system, Unfortunately, should the control over an account fall into the hands of a cyber criminal, he can easily exploit this trust to further his own malicious agenda.

In the proposed system, Users Behaviour is analyzed based on previous behaviour such as Posted Data, Time of posting, IP Address & Location of usage of Social Media.

The modification is our implementation. We include two processes As per the Paper Compromised Social networks Accounts are tracked & detected. If hacker attacks the Genuine user then our allows the attacker to proceed further until our system captures all the important information about the attacker. We generate Honeywords based on the user info provided and the original password is converted into another format and stored along with the Honeywords. We deploy Intermediate server, Shopping server for purchase and Cloud server for maintaining user account details. Attacker who knows the E mail account of original user can easily reset the password of the cloud server. Attacker is invited to do attack in this Project, so as to find him out very easily. Now attacker logs into the purchase portal, where he is been tracked unknowingly & he is allowed to do purchase. Server identifies the attacker and sends the info to the Original owner and also it blocks the attacker even doing transaction from his original account.




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CHAPTER 8

CONCLUSION

In this project, to implement secured purchasing system in online. Honeywords are generated based on the user info provided and the original password is converted into another format and stored along with the Honeywords. If identify the hacker details such as Hacker's IP Address, E-mail ID, Phone number and postal Address are tracked and stored. Finally these details are sent to original user alternative mail id and original user find the hacker details. Original users details are very secure.



A handwritten signature in blue ink, appearing to be "Mohamed Sathak A.J.".

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PREDICTION OF LUNG CANCER USING CLASSIFIER MODELS

A PROJECT REPORT

Submitted by

SHAMREEN FATHIMA S (311814104019)

SHARMITHRA P (311814104021)

In partial fulfilment for the award of the degree

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IN

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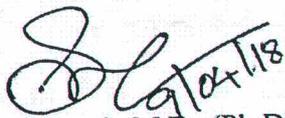
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APRIL 2018

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Certified that this project report titled “ **PREDICTION OF LUNG CANCER USING CLASSIFIER MODELS** ” is the bonafide work of “ **SHAMREEN FATHIMA S (311814104019), SHARMITHRA P (311814104021)**, who carried out the project work under my supervision.



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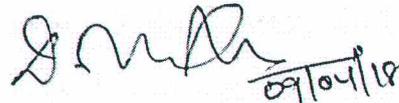
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INTERNAL EXAMINER



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ABSTRACT

Goal of this project is to minimize the time delay and provide an early prediction of Lung Cancer in patients and also to minimize the unnecessary needs for biopsies. Further it also provides a comparison between different classification algorithms.

The existing model uses the CT scans to predict lung cancer and also has insufficient data so to predict accurately. The model is created based on the Support vector machine which provides 92% accuracy. So, a solution is required to increase the accuracy rate to predict lung cancer.

The proposed solution uses the dataset for classification and contains around 300 observations. The model is created for various classification algorithms such as Support Vector Machine, Random Forest, K-Nearest-Neighbors and Naïve Bayes are compared against each other for better accuracy. This provides an early prediction of lung cancer with a higher accuracy.

Thus, in the proposed solution, the model based on Naïve Bayes achieved a highest accuracy rate of 95.23%.




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CHAPTER 8

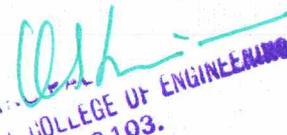
CONCLUSION AND FUTURE ENHANCEMENTS

This paper introduces the Machine Learning in health care management is not analogous to the other fields due to the reason that the data existing here are heterogeneous in nature and that a set of ethical, legal, and social limitations apply to private medical information. The experiment has been performed using Rstudio tool with several machine learning classification algorithm and it is found that the Naive Bayes algorithm with 95.24% gives a better performance over the other classification algorithm such as Support Vector Machine, Random Forest, Logistic Regression, KNN.

Diagnosis of the Lung Cancer accurately using machine learning has many significances. Different devices can be manufactured which will monitor the Lung related activities and diagnose the disease. These devices will prove to be helpful where Lung disease experts are not available. With further research machine learning can also be used to diagnose the Lung Cancer before the human experts can do.

One of the main achievements of this project was that project helped to understand the algorithms better. When tested through various situations, the algorithms performed differently which helped me to understand the algorithm's working mechanism.




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**INTER-PROVIDER ISP-TO-ISP WITH MPLS (MULTI
PROTOCOL LABEL SWITCHING) VPN (VIRTUAL PRIVATE
NETWORK) NETWORK USING MP-eBGP METHOD**

A PROJECT REPORT

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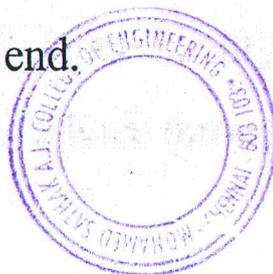
ABSTRACT

Goal of this project is to implement the VPNs to connect the customer networks (i.e.,) Inter-provider VPN network between two different Autonomous system with same customer end to the service providers (ISPs).

The existing system is currently the corporate VPN customers are geographically separated and served by single MPLS service provider. Internet is not nearly as secured as leased line, other WAN options and public ip based communication system. So a solution is, to facing more security issues through an adequate amount of security services were deployed.

The proposed solution is Inter-provider connection between multiple Internet service providers (ISP) with respect to MPLS VPN backbone. Inter-provider VPN using only private ip pool to make more secured resulting in no need of Internet at all.

Thus, by using the proposed solution, the issues in single operator contains same ISP with same customer, but in two different operators contains different ISPs with same customer end.




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RFID SYSTEM-INTEGRATED BUS TICKETING

A PROJECT REPORT

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ABSTRACT

The number of blood donors in India is very less when compared with other countries. In the proposed project, a new and efficient method to overcome such a difficulty is proposed. The donor will be asked to enter an individual's details like name, phone number, age, weight, date of birth, blood group, address etc. as an initial input. At the time of emergency, when blood is urgently needed the user can check for blood donors nearby by through the help of GPS. Once the app user enters the blood group which he/she needs the system will automatically search and show the donors nearby and send an alert message to the donor. In case the first donor is not available it will automatically search the next donor which is present in queue. If the donor accepts the request then an one time password (OTP) will be send to the donor to verify. Blood donation app provider list of donor in your city/area. Once the donor donate the blood it will automatically remove the donor detail for next three months.




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CHAPTER 9

CONCLUSION

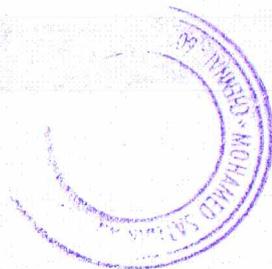
The fare collection problem has been eliminated. Moreover, the project phase is completed successfully by using smart card.

This project is made with pre-planning, that it provides flexibility in operation. This innovation has made more desirable and economical.

Thus the passenger will travel by showing RFID card before they travel into bus. So there is an security while passenger enter into the bus. RFID cards being reusable are much more convenient compared to the paper based ticketing system.

The system is expected to be fully automated, reliable, transparent and convenient. The whole system can also be used in vehicle on highways, their toll payment and in the railway ticketing system with small or no modification. The cards being reusable, they are much more convenient compared to the paper based ticketing system.

This project "RFID SYSTEM -INTEGRATED BUS TICKETING " is designed with the hope that it is very much economical and helpful for passengers and as well as conductors during Journey.



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TRAFFIC PERCEPTIVE MANAGEMENT SYSTEM
A PROJECT REPORT

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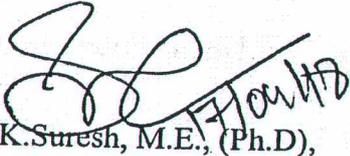
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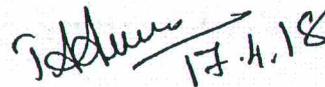
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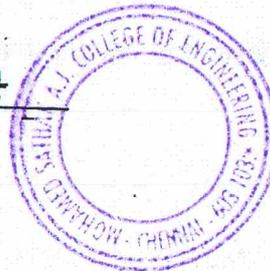
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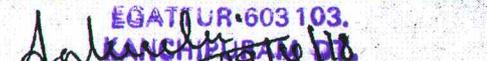
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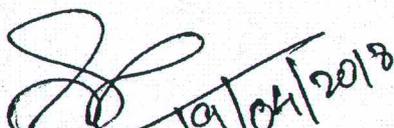
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ABSTRACT

In this fast-paced life where travelling through roadways is quite common, the free flow of traffic at any given time is not possible at all times. The traffic signals are given timings on when to change the signals for particular routes but they are not dynamic. This results in an inefficient management of traffic signals thereby sometimes causing traffic jams. Changing signals based on the number of vehicles at a particular lane would require some police personnel or some sensor, which still does not guarantee the efficient management of traffic. Cameras installed at junctions can be used to capture the flow of traffic and detect vehicles and change the timing of signals dynamically based on this processed data.

It can be further improved to detect emergency vehicles to change the signal timings and attempt to minimize the traffic congestion and increase the free flow of vehicles. Image processing is used for vehicle detection which helps in counting the number of vehicles in any particular lane. This information could then be used to manage signal timings accordingly.



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CHAPTER 7

CONCLUSION AND FUTURE ENHANCEMENTS

The whole concept of making something smart lies behind making it flexible and adaptable to the changes in its **operating environment**. With technological advancements in today's world with its ever-growing pace, there's always room for advancing the technology and future enhancements. Adaptability is one of the key characteristics of anything that is smart.

This Traffic management system could be further enhanced by introducing new algorithms and new hardware that could operate more efficiently than this system.

Furthermore, to **detect** the vehicles not following the traffic rules and send signals to the nearby patrols on duty so that necessary action be taken. detection of emergency vehicles and using this information to clear out next signals by passing the information could also be done. Detecting the vehicles to take necessary actions for breaking traffic rules such as crossing the stop line, stopping on zebra crossing which could be a hindrance to the pedestrians can also be introduced. Over-speeding vehicles which tend to break traffic rules can also be detected and this message could be passed on to the Road Safety Patrol every time they cross a signal for catching them.




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WEB-BASED REAL-TIME CHAT APPLICATION

A PROJECT REPORT

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ABSTRACT

Goal of this project is to develop real-time chat application which runs on the cloud server which provides a safe, secure and highly scalable web-based chat application.

The existing system of chat messenger in the android systems/ windows systems/ ios systems need to be built keeping the platform in concern i.e., it need to be platform specific. And moreover these application occupy a separate memory i.e., physical memory (ROM) as well as RAM in our device. So, a solution is to provide a highly responsive web-based real-time chat application.

The proposed solution aims at providing high-performance mobile responsive chat application which runs on the cloud server. And moreover every message sent through this application is encrypted using high speed AES encryption algorithm. This increases the privacy of the user data sent through this application i.e., data security is achieved.

Thus, by using the proposed solution, the drawbacks in the traditional platform specific chat application like physical memory requirement and platform dependency are has been removed.




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CHAPTER 7

CONCLUSION

There is always a room for improvements in any software package, however good and efficient it may be done. But the most important thing should be flexible to accept further modification. Right now this application is just dealing with text communication. In future this software may be extended to include features such as:

- **File transfer:** This will enable the user to send files of different formats to others via the chat application.
- **Voice chat:** This will enhance the application to a higher level where communication will be possible via voice calling as in telephone.
- **Video chat:** This will further enhance the feature of calling into video communication.




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AI DRIVEN INTEGRATED CROP MANAGEMENT SYSTEM

A PROJECT REPORT

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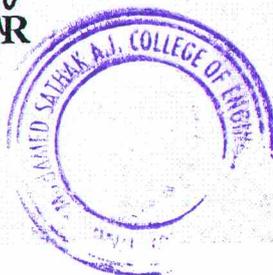
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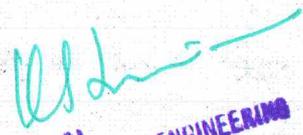
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ABSTRACT

Agriculture is the backbone of any country's economy. However, farming and farm related infrastructure has been grossly underrated in the past few years. The industry as such, has not seen any significant growth after the Green Revolution. In spite of the exponential growth of IT and smart-computing, agriculture has remained quite stagnant. The benefits of innovative breakthroughs in Artificial Intelligence and machine learning have not yet percolated into the farming sector.

There is an urgent need to increase productivity, enhance seed and soil quality and maximize profits for the farmer. Contemporary algorithms and techniques can be potentially used to solve day to day problems of irrigation, and agriculture in general. Present day analysis and maintenance tools are not efficient enough to match the ever growing requirements of the agriculture industry. Under the proposed system, a unified platform for all farm related activities is implemented.

Through the practical implementations of appropriate AI algorithms, managing and maintaining crops will be made an easier affair. It is a holistic approach to farming which includes soil analysis, farm equipment aggregation and optimum resource use through various concepts of Artificial Intelligence such as fuzzy logic, Bayesian networks and machine learning. Ultimately, these steps increase the yield and profits by a great margin, and augment the growth of agriculture from a macro-

economic perspective.



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CHAPTER 6

CONCLUSION AND FUTURE ENHANCEMENTS

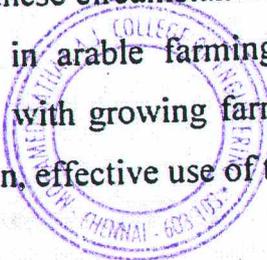
6.1. CONCLUSION

This Integrated Crop Management Application has a broader scope in the sense that it combines all the macro as well as the micro-level farm activities of the agricultural system into a single window application. This application is presented to the end user in a highly customizable format, which makes it very easy to use and to implement. All the reports and predictive analysis that are to be generated from this application are deemed to be accurate and highly specific to the individual user. Therefore, it is an innovative, yet secure method through which even an uneducated and/or poor farmer can maximize his profits by following a scientific method.

6.2. FUTURE SCOPE

On-farm production of bio-fuels offers a lot of potential advantages like the independence from oil shortages possible in the future, an important contribution of the farms in reducing CO₂ emissions and contribute to the targets set by NABARD and an additional income to the farmers and rural areas an important factor to maintain farming communities in rural areas. Assuming that direct use of vegetable oils is technically and practically possible, an energy self sufficient farm can be developed. Based on the crop yields achieved and the oil extraction by cold pressing efficiency a part of the farm ranging from 6 to 12% devoted to energy crops can cover the liquid fuel requirements of a farm. Besides on-farm biofuel production, reduction of on-farm energy use is a way to improve the sustainability of arable farming.

Under conditions in Northern India, ploughing is amongst the main direct energy consuming activities. The use of artificial fertilizers ranks high on the list of indirect energy consumption. No-tillage farming seems a suitable alternative. Under south Indian conditions irrigation is besides ploughing the energy consuming activity. As water is a strongly limiting factor under these circumstances, suitable mitigation strategies will be hard to develop. Fleet management in arable farming still relies strongly on human supervision and decision making. Yet, with growing farms, growing machine fleets and growing associated costs of mechanisation, effective use of these resources is required.



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SECURE THE DATA ACCESS IN CLOUD COMPUTING USING TWO LAYER ENCRYPTION

A PROJECT REPORT

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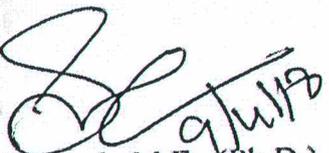
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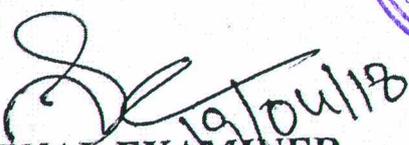
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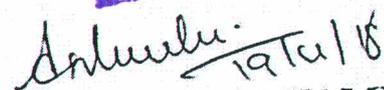
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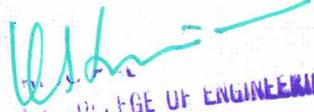

EXTERNAL EXAMINER

ABSTRACT

Cloud computing has been envisioned as the next generation architecture of IT enterprise. It allows to move the application software and databases to the centralized large data centers, as the data are stored in the cloud there arises a critical factor of increasing the security and confidentiality issues.

In the existing system data recovery and security is the major problem. Thus, the study of this problem is resolved in the proposed system which has two-layer encryption for ensuring the data confidentiality. The outer layer encryption is achieved by the cloud side and inner layer encryption is performed by data owner. Data is encrypted, split and stored in different Cloud. MHT algorithm is used for data splitting. Replica is created for data backup. Top Hash Key is stored in separate cloud and in the Local Backup. The encrypted file doesn't store directly, it will be stored into different databases of server location which improves the security and also availability of the data unaffected. In order to guarantee data reliability, erasure codes have been used in distributed storage systems.




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CHAPTER 8

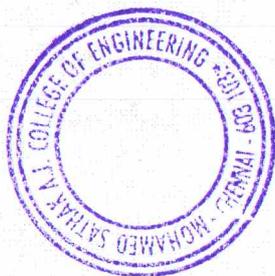
CONCLUSION AND FUTURE WORK

8.1 CONCLUSION

In this project we proposed a privacy preserving public auditing system for data storage security in cloud computing. We utilize the homomorphic linear authenticator and random masking to guarantee that the TPA would not learn any knowledge about the data content stored on the cloud server during the efficient auditing process, which not only eliminates the cloud user from the tedious and possibly expensive auditing task, but also alleviates the users fear of their out sourced data leakage. This becomes difficult to work with the real time server for storage and enhancing the system to cope with insider threats.

8.2 SCOPE FOR FUTURE WORK

We further extend the difficulty to work with the real time cloud server for storage and enhancing the system to cope with insider threats.




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GPS BASED ANDROID APPLICATION FOR BLOOD DONATION

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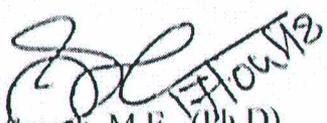
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Certified that this project report titled " **GPS BASED ANDROID APPLICATION FOR BLOOD DONATION** " is the bonafide work of **FARIHAN A (311814104006)**, who carried out the project work under my supervision.

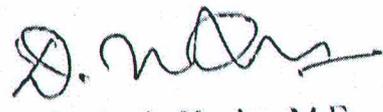

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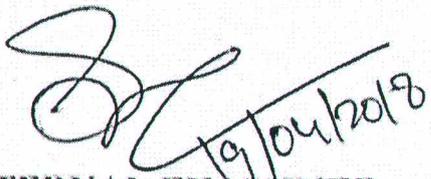
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INTERNAL EXAMINER


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ABSTRACT

The number of blood donors in India is very less when compared with other countries. In the proposed project, a new and efficient method to overcome such a difficulty is proposed. The donor will be asked to enter an individual's details like name, phone number, age, weight, date of birth, blood group, address etc. as an initial input. At the time of emergency, when blood is urgently needed the user can check for blood donors nearby by through the help of GPS. Once the app user enters the blood group which he/she needs the system will automatically search and show the donors nearby and send an alert message to the donor .In case the first donor is not available it will automatically search the next donor which is present in queue. If the donor accepts the request then an one time password (OTP) will be send to the donor to verify. Blood donation app provider list of donor in your city/area. Once the donor donate the blood it will automatically remove the donor detail for next three months.




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CHAPTER 5

CONCLUSION AND FUTURE WORK

In this project enables to save people's life by providing required blood type on time to alerting nearby available and willing blood donors. The GPS system uses Shortest-Path Algorithm to alert nearby donors and asks for the blood whether the donor is willing to donate or not. This proposed system helps to find the donors in an appropriate period of time and there is no need for the patients to wait for blood requirement in serious conditions.

Future Scope

- This Application can be expanded over worldwide
- Reaching as close as possible for donors from emergency cases
- Need more number of users and extra modules can be added for future use




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EMBEDDED PREPAID ENERGY METERS SYSTEM TO CONTROL ELECTRICITY

A PROJECT REPORT

Submitted by

MOHAMMED IBRAHIM HUSSAIN M (311814104011)

In partial fulfilment for the award of the degree

of

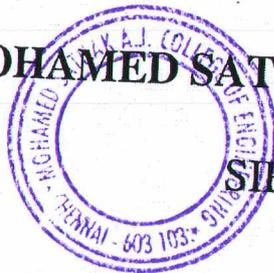
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IN

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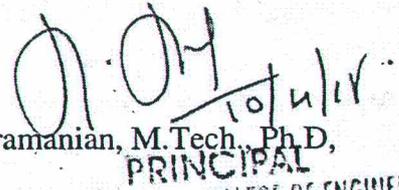
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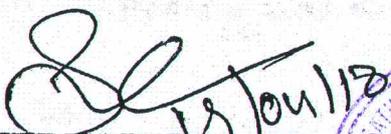
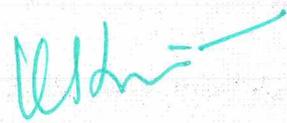
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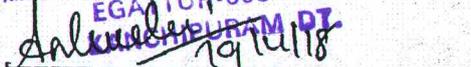
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INTERNAL EXAMINER



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EXTERNAL EXAMINER

ABSTRACT

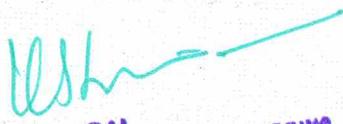
Aim of this project it need to avoid the electricity manual reading and maintain the electricity loss that why we used this concept because it used to a some setup to monitor and control this all this process. Some controlling setup used to control the entire process of this energy metering, and also this method used to find the maximum usage of energy in the particular area that track by using this concept.

In the existing system energy consumption is manual and Huge Manpower needed to calculate the energy consumption. The power problems are discovered after they occur then a client places a service call to solve the problem and in many case the defect is not traced to actual source

In the proposed system the power utility maintains a server and each consumer are provided an energy meter. The server and prepaid meters use WI-FI modem and WI-FI module respectively to communicate with each other using the WI-FI network. Eliminate the manual meter reading and all this meter more quickly and get the details also very quick analyze and response it properly. The demand of power is reduced.

Thus, by using the proposed solution, it can monitor and control the energy meter and reduce the high usage of electricity.




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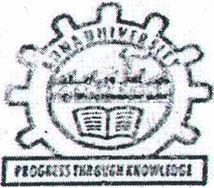
CHAPTER 8

CONCLUSION AND FUTURE WORK

In this project, it have proposed a prepaid energy meter which takes advantage of the WI-FI network that has virtually access to every household and area across different countries. The WI-FI communication not only implements the idea of prepaid consumption of electricity but also facilitates the utilities to control energy theft using our smart energy meter. In this system, the information of electricity theft is directly reported to the central authority. Therefore, utilities can take immediate legal action against the accused consumer and hence control electricity theft to a great extent. The proposed meter is thus highly useful for power utilities for reducing electricity pilfering and ensuring revenue collection. In future case based on cloud computing and based on multi neural networking will done this kind of execution. As well as made the data and network security in neural network. Help of Data security algorithm will make the data security and help of the protocol will make the network security. At finally, help of the efficient processors will get high speed for the total processing.




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EYE SPEAK : COMPREHENSIVE ANDROID IMPLEMENTATION OF VOICE CALLING, E MAIL & SECURED TEXTING FOR VISUALLY CHALLENGED PEOPLE

A PROJECT REPORT

Submitted by

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NANDHA KUMAR B (311814104013)

In partial fulfilment for the award of the degree

of

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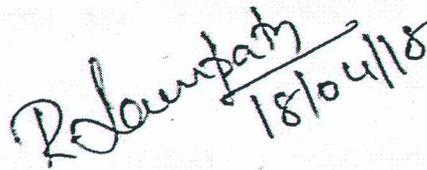
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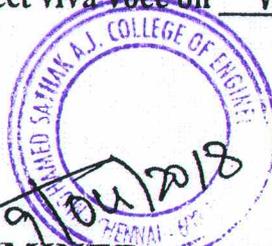
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INTERNAL EXAMINER



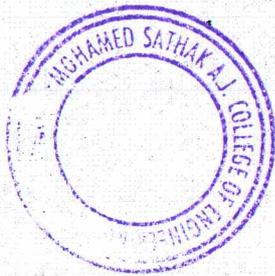
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ABSTRACT

In the Existing system, When an SMS is sent; the message is temporarily stored in the SMSC and is transmitted to the SMS user when the other user is online. If the recipient is not online, the SMSC will keep a copy of the sent message for a specified period of validity, In the Proposed system, Android Application is deployed for Texting message.

Once user sends a message to the receiver, it will be encrypted and converted into ASCII then to binary number and transferred to the receiver. Receiver Key is used to decrypt the Textual content. In the MODIFICATION part of the project, apart from the proposed system, visually challenged person can Send / Receive Textual messages, can make a Voice call as well as can send E mail to the receiver. They can initiate this application by pressing the Volume button twice. Voice based Voice questions can verify about the Genuinty of that person.




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CHAPTER 6

CONCLUSION AND FUTURE WORK

An automatic speech recognizer studied and implemented on the android platform which gives much accuracy for both numeric and alpha numeric inputs. The accuracy of this system is about 90%, and delay for recognition is less than 100 ms.

To plan to implement this work for other languages as well as test them on the SMS sending application which is developed.




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ADMIN SIDE WORDPRESS PLUGIN FOR PATIENT RECORD MANAGEMENT

A PROJECT REPORT

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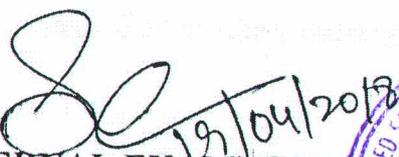
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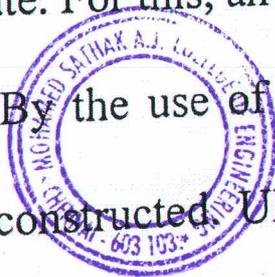

INTERNAL EXAMINER




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ABSTRACT

Today, more than twenty eight percent of the internet runs on the Wordpress platform. Wordpress has emerged as one of the most convenient and feature-rich website hosting platforms in recent times. It's popularity and prominence can be attributed to the fact that many interactive websites like Facebook, BBC Corporation and Disney run on this platform. There are many commercially available plugins for use in both client and server side. However, on recent research, it has been found that there is a dearth of any credible system for management of patient records in the admin panel of hospital websites that run on Wordpress. There are many standalone web applications for the same, no doubt, but there is not a particular application that fits into this Wordpress framework. Under the proposed system, a comprehensive plugin will be designed and built for patient record management for the administrators, most probably doctors, of Wordpress sites. The above mentioned plugin strives to transcend the limited boundaries of website scripts and to blend seamlessly with the already existing Wordpress site template. For this, an advanced concept in PHP is used - commonly known as 'Hooking'. By the use of appropriate hooking functions at appropriate places, the plugin is constructed. Ultimately, this relieves the burden of separate applications for patient management in Wordpress sites, thereby providing an integrated work environment for Wordpress administrators.



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CONCLUSION AND FUTURE ENHANCEMENTS

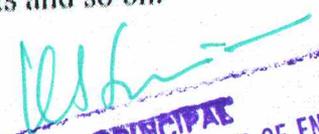
6.1. CONCLUSION

- Patients Records Management System is a fully fledged system aimed at enabling any Hospital to keep track of all the patients
- This will help to improve ways in which services are rendered to patients by increasing efficiency and reducing time taken to deliver services.
- The above explained system will enhance quality and efficiency delivery of the above services due to the ease at which the records will be accessed

6.2. FUTURE SCOPE

1. Pharmacy Module - Pharmacy module deals with the automation of general workflow and administration management process of a pharmacy. The pharmacy module is equipped with bar coding facility, which makes the delivery of medical items to the patient more efficient.
2. Laboratory Information System - The Laboratory module automates the investigation request and the process involved in delivering the results to the concerned department/doctor of the hospital. Laboratory module starts with receiving the online request from doctors and also allows laboratory personnel to generate requests. The Laboratory module supports to perform various tests under the following disciplines: Biochemistry, Cytology, Hematology, Microbiology, Serology, Neurology and Radiology.
3. Radiology Management Module - Radiology module caters to services such as X-ray, Scanning, Ultra sound etc. Scheduling of Radiology resources is possible. The system stores all the result details of various tests and makes a Report based on the Test Results.
4. Electronic Medical Record (EMR) - The EMR Module is a fully integrated knowledge repository that caters to Medical and clinical records of patients in the hospital. The system supports medical professionals of various departments of the hospital with relevant information like medical examinations, diagnoses, treatment histories, test results and so on.




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