



INSTITUTE OF AERONAUTICAL ENGINEERING

(Autonomous)

Dundigal - 500 043, Hyderabad, Telangana

COURSE CONTENT

WEB SYSTEMS ENGINEERING LABORATORY								
IV Semester: CSE (CSE) / IT / CSE (DS) / CSE (AI&ML)								
V Semester: CSE (CS)								
Course Code	Category	Hours / Week			Credits	Maximum Marks		
ACSD17	Core	L	T	P	C	CIA	SEE	Total
		-	-	2	1	40	60	100
Contact Classes: Nil	Tutorial Classes: Nil	Practical Classes: 45			Total Classes: 45			
Prerequisite: Programming with Objects								

I. COURSE OVERVIEW:

This course will give you the basic terminology and fundamental concepts to build modern web applications. This course introduces students to develop web applications. This course presents the basics of HTML5 and CSS3 for Web application development using HTML links and HTML forms. Introduction to the use of React router and its use in developing single-page applications, redux to develop React Redux powered applications, client-server communication and the use of REST API on the server side and react primitives render to native platform UI. This course will make the students to expose the front-end framework Bootstrap and to basic security mechanisms for server-side web application development.

II. COURSES OBJECTIVES:

The students will try to learn

- The characteristics, systematic methods, model for developing web applications.
- The concepts of client side programming with Bootstrap ,JavaScript, Ajax , Design user interfaces that follow best practices for usability and user experience
- Web application Development Database with React and React Native.

III. COURSE OUTCOMES:

At the end of the course students should be able to:

- CO1 Create a web page with different layouts including links by applying different styles and colors to produce specified outputs.
- CO2 Develop a responsive web application using bootstrap with background images, menus, with admin panel and tables.
- CO3 Develop interactive forms with different styles using java script, CSS and bind data using AJAX.
- CO4 Develop single page applications using react router and make use of react data libraries for data visualization in dynamic pages.
- CO5 Adapt to design and develop web applications like drunken snake game and chat application with API responses using the industry's current models and architectures.
- CO6 Test for the database to extend the features and deployment of applications for solving problems that require interaction with a web server.

IV. SYLLABUS

Getting Started Exercises

1 CEW (Corporate Employee Welfare) Net Work

Objective:

All corporate employees can share following value points using CEW web base application

1. Innovative thoughts
2. All Company Events (photos share)
3. Technical droughts
4. Work experience
5. Personal relating things (Property Sales and Home Rent)
6. All company growth (share market)
7. All company Employee referral (job vacancy)
8. Matrimonial
9. Birth days
10. Travel / Picnic / Get together Plans

Functional Requirements

1. Employee verification
2. All Company Events
 - Technical droughts
 - Work experience
 - Property sales and Home rent
 - All company growth (share market)
 - All company Employee referral (job vacancy)
 - admin
 - User management

Reports

1. Admin report
2. Bank report
3. Viewable and downloadable reports with password protection

See also for authentic understanding, click the link

https://cewacor.nic.in/MasterStatic/Employee_Welfare_Cell

<https://www.nexteraenergy.com/employee-central.html>

<https://ongcindia.com/web/eng/career/why-work-with-ongc/employee-welfare>

<https://www.pelagohealth.com/resources/hr-glossary/employee-welfare/#>

Each student has to refer any one of the web sites stated above.

2. E – Healthcare Advisor

Objective: The main objective of this project is to implement a computer-based Healthcare Information System. This system will help the users to identify certain diseases by answering certain questions asked by the system. Based on the diagnose received the user will be getting some suggestion of medicines that are available at the local chemist without prescription with an advice to visit the doctor. The system once ready should be able to train itself with the feedback given to it (Artificial Intelligence). The database will be developed with open source software.

- To conduct a diagnose in order to identify the disease
- To design a healthcare management system
- To maintain patient history and system keep self learning(artificial intelligence) to update the database.

Functional Requirements

1. It focused on the acquisition and management of disease database
2. It mainly emphasized creation and implementation of patient and disease management information system.
3. It will ease and speed up the planning decision making process , secure confidential and reliable reports
4. It helps for addressing problems of security secrecy and confidentiality of patients.
5. Used to check the delays errors inconsistencies in medical records and access to historical records
6. To maintain patient profile

Reports

1. Search the name, place, disease, periodic base reports
2. Search the nearest government approved Clinic/Hospital and suggest it to the patient.

See also for authentic understanding, click the link

<https://codethislab.com/website-health-advisor/>

<https://www.ehealthsystem.com/>

<https://e-clinic.co.uk/>

Each student has to refer any one of the web sites stated above.

3 HCSS (Highly confidential Security System)

Objective: Due to busy life style we can't remember all confidential data like All maid Id, Password, All bank account no, Insurance policy No, PAN NO, Driving License No, Password Port No, All education certificate Numbers, Some highly value scan copy, some confidential photo and music ,videos. It is a software locker which can hold user sign in information, much like the functionality of SSO, however one can also couple a biometric hardware to strengthen the security system. The system will help user in logging in to the client system for which it is holding/storing the password, either by the software interface or directly by hardware interface. So we can develop highly security web application (new security algorithm and hardware system) .so we can store all confidential data in single credentials

Functional Requirements

1. Security System (Software and hardware)
2. To provide mail id and password locker
3. Bank account information locker
4. Videos locker v. Images locker
5. Music locker
6. Admin
7. User management

Reports

1. Admin report
2. Bank report
3. Viewable and downlable reports with password protection

See also for authentic understanding, click the link

<https://azure.microsoft.com/en-in/solutions/confidential-compute>

Each student has to refer any one of the web sites stated above.

4 Food Safety Portal

Objective: Provide an application which allows residents and visitors of a city to find out more about food-related aspects about the city. Aspects include information about restaurant and market certifications and what to look for (education), local diet and/or delicacies, or even a restaurant guide.

Functional Requirements

1. Web accessible information base
2. Provide templates for information entry – e.g. education, dining guide, food handling guide, etc.
3. Allow for easy update of information by city employees
4. Allow for easy retrieval of feedback collected to facilitate acting on feedback received
5. Extensible to allow each city to update with their own specific information
6. Allow report of food-related illness (non-life-threatening)
7. Allow report of food safety concern
8. Allow submission of suggestions for improvement
9. Enable a map view of the city which marks locations of restaurants and markets

Reports

1. Report of restaurants visited and reviewed
 2. Report of food-related illnesses
 3. Usage report of website (hit rates, popular pages)
 4. Report of user suggestions
-

See also for authentic understanding, click the link

<https://services.india.gov.in/service/detail/national-food-security-portal-1>

<https://www.india.gov.in/content/national-food-security-portal>

<https://www.ifpri.org/publication/india-food-security-portal>

<https://damoh.nic.in/en/rationmitra/>

Each student has to refer any one of the web sites stated above.

5. HR Operations Manager

Objective: In business environments filled with diverse forms of content, continually changing and complex business processes, and an array of different line-of-business interfaces, companies are looking for ways to gain operational efficiencies, reduce risk, and improve quality through exception management and end-to-end process visibility.

The solution will be used to demonstrate how value can be delivered across any business process by linking business processes to relevant business content, and to the people that need to make business decisions.

Functional Requirements

1. Workflow capabilities of the proposed system
2. Components for Business Process
3. HR new hiring process with;
 - i. Applicant submits his/her Resume to an identified e-mail id with an opportunity id.

- ii. On receiving the email, extract the mail contents & store it.
- iii. Based on the opportunity id send it to respective HR. (Finance, IM, etc.)
- iv. HR will verify the resume; if shortlisted, forward it to respective Managers. On rejection, an email will be sent to the Applicant with reason.
- v. Manager will schedule the interview & assign a team member to perform interview.
- vi. Interviewer conducts the interview & updates the interview results.
- vii. Manager will update based on the results.
- viii. HR will send out the offer letter if selected.
- ix. Applicant will respond with Acceptance/Rejection subject line. On Rejection process will be ended. On Acceptance new employee ID/mail-id will be generated & process will be ended.

Reports

1. Reports customizing the stored data in a platform independent format and displaying it using style sheets.
2. Admin must be able to data in reports in excel sheets.
3. Admin must be able to make pictorial depiction of data in excel sheets for better understanding.
4. Reports should be elaborate for all the users.

See also for authentic understanding, click the link

<https://azure.microsoft.com/en-in/solutions/confidential-compute>

Each student has to refer any one of the web sites stated above.

6. Investor self service Application

Objective: To build an investor self service portal for an Asset Management Company (AMC) that would allow its investors to have real time access to customer portfolio and various other functionalities.

Functional Requirements

The investor self services portal (ISSP) will provide the following functionality to the AMC's investor.

1. Login – Login in to the AMC's investor portal with folio number and pin.
2. Account Summary – Portfolio details with cost value and current valuation.
3. Account Statement – Ability to generate account statement in predefined format.
4. Fresh Purchase - Ability to sign up as a new investor by entering relevant data and having the application form prefilled, ready to be signed and dispatched to the AMC. Ability to track status of Application using Application Inquiry Screens. Ability to make first purchase online (through PG integration) or through cheque/demand draft.
5. Additional Purchase – Ability to invest into new schemes or make additional investments in an existing scheme. This module will be integrated with the payment gateway. Customer account will be debited and PG provider's pool account will be credited instantly. Purchase transaction will be booked only after successful payment confirmation from the PG provider.
6. Redemption – Ability to redeem existing investments. Redemption can be done for all units, selected no of units or by specifying amount.
7. Switches – Ability to switch from one scheme to another. It will be possible to switch to new schemes as well.
8. Change of Dividend option – Ability to change Dividend option from Re-Invest to Payout

and vice versa. Not applicable for Growth schemes/plans.

9. View Transactions – Listing of last few transactions initiated by the investor.
10. View Bank Details – Details of existing bank mandates specified by investor while booking purchases.
11. My Profile – Listing of the investors profile including his address, email id, registered PAN No, KYC status for himself and joint holders etc.
12. Change pin – Investor can change his pin after having logged in to the portal.
13. Security features should include Account lockout – Account can be locked out after a configurable number of failed login attempts. There must be a capability to unlock the folio from the application console.
14. Security features should include SSL based access – The transport channel will be SSL enabled right from the client browser. Access to the PG provider's site will also be SSL enabled.
15. Security features should include Change Pin on first access – Pin will have to be changed by investor on first login.
16. Security features should include Regular 'Change Pin' Mechanism - Subsequently, investor can be forced to change his pin at a configured time interval (say 3 months)
17. Account debit to be authorized by investor by entering his internet banking credentials along with any additional security imposed by the bank.
18. ISSP will perform a number of basic validations on the transactions. Examples of local validations would be:
 - i. Minimum investment amount
 - ii. KYC status and PAN status
 - iii. Inability to invest in a closed ended scheme where the scheme has already been closed.
19. Administration Module will include the functionalities:
 - i. Changes in the Masters will be made by the Operations Team
 - ii. Locking and Unlocking of Investor Accounts
 - iii. Viewing all transactions across all investors

Reports

1. Reports customizing the stored data in a platform independent format and displaying it using style sheets.
2. Admin must be able to data in reports in excel sheets.
3. Admin must be able to make pictorial depiction of data in excel sheets for better understanding.
4. Reports should be elaborate for all the users.

See also for authentic understanding, click the link

<https://www.tricorglobal.com/services/investor/self-service-portal/>

<https://www.infosys.com/industries/utilities/case-studies/web-self-service.html>

<https://www.salesforce.com/products/customer-self-service/>

Each student has to refer any one of the web sites stated above

7. E-MANDI (electronic -vegetable market)

Objective: The main objective of this project is build a website which will help civilian, retailer whole seller and even the farmer to get the best from his inputs. with the help of this a farmer will be able to know the best value for his vegetable and will not be fooled by the marketers.

it will help in keeping the transparency between the whole seller and retailer and also the selection for civilian for his requirement become easy .so this will help in eradicating black marketing and inflation.

Functional Requirements

1. People can register to have a complete view of the market including the pricing of vegetables, pricing difference between whole seller and retailer, actual pricing stated by government, best possible retailer in the market for civilian in his area, revenue generated last month and a period of time.
2. Non registered can have an overview of these facilities excluding some.
3. Feedback or complaint facilities directly connected to government bodies to keep a view on the market but mentioning the unique id of the complainer.
4. Admin should be able to see all record from any users.
5. The records shown for selling should be available in a format of Quantity name, Quantity available, price
6. The database should be robust enough to handle all the online transactions which will be happening.
7. Website will be available in regional languages.
8. People will have facility of viewing the price difference between different regions and the inflation rate also.
9. Person have facility of booking vegetables for commercial use on a large scale online through bigger marketers.
10. Help section for those who are unable to understand the website or any of its part.

Reports

1. Daily report of enrollment to Admin.
2. Monthly report of enrollment as per states to Ad-min i
3. Work hours uses of Computer professionals on a monthly basis to Admin

See also for authentic understanding, click the link

https://www.jiomart.com/c/groceries/fruits-vegetables/fresh-vegetables/229?prod_mart_groceries_products_popularity%5Bpage%5D=2
<https://www.bigbasket.com/cl/fruits-vegetables/>
<https://farmersfz.com/>

Each student has to refer any one of the web sites stated above.

8. Issue Tracking scenario

Objective: To provide Issue tracking for projects

Functional Requirements

1. Individual accounts for Developers.
2. Ticket creation and updation.
3. Search for tickets.
4. Set Priorities for Tickets (higher-1,2,3)
5. View ticket details.
6. Assigning or UN-assigning a ticket to Developer by higher authorities or by themselves.
7. Uploading patch files or any other required files after solving the issue and update

- the ticket status.
- 8. Maintain activities for
 - I. Ticket- Comments and History.
 - II. Developer – Comments and work log.
- 9. Export a ticket in different formats like doc and pdf.

Reports

- 1. Daily Tickets Reports
- 2. Daily Solved tickets Reports
- 3. Monthly Tickets Reports

See also for authentic understanding, click the link

https://www.projectmanagement.com/wikis/233063/issue-tracking#_=_

<https://www.zoho.com/bugtracker/issue-tracking-system.html>

Each student has to refer any one of the web sites stated above

9. Online grievance redressal system

Objective: The people need not go to the higher authorities always when they face problems. They can use the service of this software browser and can give their complaint and the complaint is taken up by the employee of specified department and he solves the problem.

- 1. To create a user-friendly online interface for citizens to communicate with administrative body and, reduce the distance and time barrier between citizens and administration.
- 2. To create a online platform where people can share ideas, invoke discussions, issue complaints, create suggestion/petitions for improvement of city administration.
- 3. To encourage the citizens to actively participate in city administration to bring transparency and flexibility in system.

Motivations to build this system:

- 1. Limited hour service availability in the current system.
- 2. Lack of involvement of people in exhibiting their responsibilities towards society.

Functional Requirements

- 1. Online Registration for public
- 2. User-friendly Interface
- 3. Easy intake of user need
- 4. Manager, employee related user id, passwords are send to their respective mails
- 5. Verification of manager, employee, public details
- 6. Online interaction of administrator, employee and managers
- 7. End to end interaction of employees with public
- 8. Administrator controls all department queries

A. Users (Citizens):

- I. Users should be able to create new account, log-in to their existing accounts which will give them
- II. The authority to use the services provided by the system.
- III. Authenticated users should be able to issue complaints, check complaint status, submit feedback, browse through other complaints and their feedback.
- IV. Authenticated users should be able to create suggestions/petitions; other users can

support or make suggestions for petitions; forward petitions to corresponding authority for possible implementation.

- V. Users can to create groups where users can share their experiences; discuss common problems, and the possible solution;

B. Municipal authorities:

- I. Municipal authorities can log-in to their accounts as created by administrator.
- II. Authorities can access all the complaints, suggestions from users.
- III. Invoke proper activity in response to valid complaints, or redirect inappropriate complaints to the administrator.
- IV. Give response to complaints with activity reports.

C. Administrators:

- I. Create, and monitor accounts of authorities.
- II. Filter the content reported as inappropriate and handle threats.
- III. Handle complaints about improper response by municipal authorities.

D. NGO's:

- I. NGO can form user groups similar to other users.
- II. NGO's can publicize their social causes on the site.

Reports

- 1. Weekly report
- 2. Monthly report
- 3. Status report
- 4. Yearly report
- 5. Escalation reports based on responsibility matrix
- 6. Queries and responses answered report
- 7. Complaint report including complaint details, response details, feedback
- 8. Section-wise user-feedback summary

See also for authentic understanding, click the link

<https://pgportal.gov.in/>

<https://grs.nios.ac.in/>

https://www.consumercomplaints.info/?tm=tt&ap=gads&aaid=adaVTn2qEIBda&gclid=Cj0KCQjw-pyqBhDmARIsAKd9XIOOudygMWMedVUYZQpHIS1BUBOaBTvrdITyXMaOqBqslc2q47YKGHIaAs3zEALw_wc

Each student has to refer any one of the web sites stated above.

10. E-Hospital System

Objective: A solution that allows all the E-Hospital System

Functional Requirements

1. Patients should be able to check doctor availability and book the appointment.
2. Doctor should be able to accept or reject appointment.
3. Doctor prescription storage and viewable to all departments.
4. Lab admins to update lab test results
5. Pharmacists to provide stock details and delivery of medicines.
6. Billing user to bill based on all the transactions done at each department and keep a track of the same.
7. Automatic notification between doctor, patient, pharmacists, lab admins and billing divisions based on use case.

Reports

1. Doctor availability reports
2. Day wise Patients reports
3. Pharmacists delivery report

See also for authentic understanding, click the link

<https://www.adroitinfosystems.com/products/ehospital-systems/>
<https://nextgen.ehospital.nic.in/ehosModuleList>

Each student has to refer any one of the web sites stated above

11. Smart Transportation Based Car Pooling System

Objective: To maintain a web based intranet application that enables the corporate employees within an organization to avail the facility of car pooling effectively.

Functional Requirements

1. A system for an Admin who can enter the employee details like name, contact number, vehicle details etc.
2. Corporate employees can register the details to the website
3. The facility to see the available services in the route
4. Employees receive SMS alerts regarding the route and timings.
5. The facility to check whether the vehicle and driver is authorized or not
6. Admin can view the report of the car pooling process to improve the system
7. Employees can report suggestions/complaints in the website
8. Admin can monitor every activity which is performed by system
9. Employees can view the details of registered vehicles and the owners which will develop trust and understanding among the employees

Reports

System will generate

1. Monthly Reports
2. Weekly Reports

See also for authentic understanding, click the link

<https://quickride.in/>

<https://www.pcb.ub.edu/en/carpooling/>

Each student has to refer any one of the web sites stated above

12. Law & Order Automation

Objective: To deliver next generation police and law enforcement reporting tools, and setting up intelligence platforms that agencies use to take incoming incident reports, lessen employee resources and allow these enforcement agencies to reallocate resources to much needed community areas

Functional Requirements

1. Administrator should be able to create/edit a virtual police station (PS) which represents a real police station as a first time setup.
2. Appointing of police officers to a particular police station which is present in a specific zone or to a specific district as a first time setup, he should be transferable at later time.
3. PS should have areas of control which can be modified at later time.
4. Police station has several departments like Law and Order, Women Protection, Cybercrime, Traffic and control, CBI, etc. Separate module for each dept would be needed.
5. When a complaint is made it undergoes various processes like FIR, Charge Sheet, Property Seizure, court disposal etc all these activities are performed by a PS.
6. Traffic and Control has important part where the Traffic inspector would be filing a charge sheet from a mobile or PDA.
7. Maintaining the criminal information state wise/area wise/age wise is mandatory
8. Sharing of case details with PS in other states is needed. Note : Other state may use different database and different platform (use of IBM MQ is necessary)
9. Communication between officers is mandatory through forum, chat, polls.
10. The magistrate should be able to access the case details and provide/deny the arrest warrant.
11. Citizens should be able to apply for various licenses like Arms, loud speaker, Hotel/lodge, browsing centre, mass meetings etc., and the officer should be able to approve/reject which will be notified to the applicant via SMS and Mail
12. Secured registration of citizens is needed where they need to provide proof of citizenship, which will be cross checked by the police officer of that area.

Reports

1. Complaints filed in a day and action taken to it. It should also report unattended complaints.
2. Crime rate due to various types of crimes in a month/year and also in district/state wise.
3. Report regarding most wanted criminals and bounty information if available.
4. Police officers often export the FIR copy to PDF format.

See also for authentic understanding, click the link

<https://www.mha.gov.in/en/commoncontent/law-and-order>

<https://nclt.gov.in/>

<https://lawcommissionofindia.nic.in/>

<https://doj.gov.in/>

Each student has to refer any one of the web sites stated above

13. Online Book Sales with Mobile SMS

Objective: The main objective of this project is to implement a computer based Online Book Sales System with the help of Mobile SMS. This system will help the users to know automatically when certain book requested by them has arrived once they have registered with the website. It will also help the users to know the latest books of their interests being introduced into the market like fiction, science, technology, romance etc. The database will be developed with open source software.

- To develop a book management system
- To design a Book Sales Management system
- To design a customer Mobile-Book sales management system interface which interacts with database system
- To mobile client be optimized and also an interface for connecting thru PC

Functional Requirements

1. It focused on the acquisition, distribution and management of books.
2. It mainly emphasized creation and implementation of a book sales management information system.
3. It automated the system with the help of SMS that informs the user about the availability, price and method of purchasing the book.
4. It will ease and speed up the planning decision making process process, secure confidential and reliable reports
5. It help for addressing problems of security secrecy and confidentiality of customer records.
6. Used to check the delays errors inconsistencies in records and access to historical records.
7. It has eased the control and distribution of books in various parts of the country basing on regional demands

Reports

To be thought of according to requirement

See also for authentic understanding, click the link

<https://www.amazon.in/Books/b?ie=UTF8&node=976389031>

<https://www.smsindiahub.in/bulk-sms-for-book-stores/>

Each student has to refer any one of the web sites stated above

14. E-Resource Technology

Objective: "E-Resource Technology" is education based website/software, helping students to get all resources & study materials of every courses available. It uses "E-Book" facility. It is reliable & time efficient approach compared to all links of the website provided by any search engine while searching for course materials.

Functional Requirements

1. To provide official & legal links of the website from which user (student) can download resources & study materials of relevant course
2. Only accessible after registering to that specific website
3. Getting associated with professors of esteemed institutes & colleges
4. To provide interaction between professor & students (users)
5. Getting associated with well known publication house so as to students can access soft copy of books published for future use
6. Not all links provided by GOOGLE are relevant. This would provide a better service.
7. Not all links provided by GOOGLE are virus free or recommended to download. This would be a

better approach.

8. To implement this time efficient strategic

Reports

1. Students/Users Report
2. Professors of Esteemed Institutes & Colleges report
3. Toppers of College / Universities report
4. Mentors report

See also for authentic understanding, click the link

<https://library.iitd.ac.in/ERD>

<https://www.education.gov.in/e-contents>

<https://www.washington.edu/doit/making-electronic-resources-accessible-libraries>

Each student has to refer any one of the web sites stated above

15. Employee Expense management System

Objective: To build an automated employee expense management

Functional Requirements

1. Voucher Entry – Screen for entering expense vouchers for any reimbursable expenses borne by the employee. A voucher should have one header and multiple lines providing detailed information of expenses incurred along with amounts.
2. Multi-level workflow – Based on the Employees department and designation, the vouchers should flow to his supervisors for their approvals. The number of approvals required will vary according to total amount of the voucher and approval limits set for supervisors.
3. Case Management – Every voucher should start a new process instance (case). Managers should be able to view vouchers waiting for their approval in their Inbox by logging in to the application. Employee should be able to track progress of his vouchers.
4. Draft Vouchers – System should provide the ability to save incomplete vouchers and submit them for approval later after completion.
5. Rejection flow – At any point in the workflow, managers should have the option of rejecting any voucher stating appropriate reasons. Rejected vouchers should come back to the Employee, who is then allowed to change details on the vouchers or provide additional information required for the approval.
6. Accounts View – Accounts department users should be able to view approved vouchers of all employees and mark vouchers as paid. This step completes the lifecycle of the voucher and the associated process instance.

Reports

1. MIS Reports – MIS reports stating status of the vouchers
2. Exception Reports – Reports listing vouchers awaiting approval above a defined turn-around time (threshold)
3. Master data management – Creation of masters for Employee Hierarchy, setting approval limits etc
4. Employee Hierarchy View - View of Employee Hierarchy
5. Rejected vouchers report – Report listing vouchers rejected by Managers
6. Reports customizing the stored data in a platform independent format and displaying it using style sheets.
7. Admin must be able to data in reports in excel sheets
8. Admin must be able to make pictorial depiction of data in excel sheets for better understanding
9. Reports should be elaborate for all the users.

See also for authentic understanding, click the link

<https://use.expensify.com/expense-management>

Each student has to refer any one of the web sites stated above

16. Insurance System with Tracking Manager

Objective: This project provides five types of Insurance services, which includes Life Insurance, medical Insurance, Motor Insurance. Home Insurance, Travel Insurance. This project provides loan facility for Motor Purchasing. The details can be viewed and updated by the officials of the company.

Functional Requirements

A. User Panel

- I. A User can view the details of various policies and schemes offered by the Insurance Company.
- II. New Users can register with the site so that he can get information online.
- III. An existing policyholder can view his policy details and calculate the premium.
- IV. The web site provides information about the new strategies and subsidiary schemes of the company.
- V. Provides loan facility for policyholders and online payments.
- VI. Provides Loan EMI calculator
- VII. Provides Interest calculator

B. Administrator Panel

- I. Administrator gives the approval for the new users
- II. Administrator edit modify and delete, upload certain information
- III. Provide the facility to send the statements and loan EMI details in pdf format to users mail ids.

Reports

1. Interest Calculation
2. Month wise registered users Insurance
3. Region wise registered users Insurance
4. Month and Region wise list of users for loan
5. Monthly Premier
6. Monthly Loan EMI

See also for authentic understanding, click the link

<https://uiic.co.in/>

<https://nationalinsurance.nic.co.in/>

Each student has to refer any one of the web sites stated above

17. AIR TRANSIT TRIP PLANNER

Objective: Build the air transit trip planner which This passenger on transit will spend their time at the airport while waiting for the next flight without any planning to visit tourism places nearby due to short period of time and much information needed to plan a short trip. This is such a waste because they actually can boost countries' economy in the tourism sector if they spend their time to visit some tourism places nearby the airport. Because of that, Air Transit Trip Planner aims to help these passengers on transit by planning a short trip to the nearby tourism places within the transition hour they have.

Air Transit Trip Planner also using Google Map API as a map to guide user and Google Places API as a data center to grab all the tourism places and its details. The output of this calculation is a suggestion of short trip planner for the user (passenger on transit). The trip planner will list down the tourism places user can visit within their flight transition hour, the distance to go there and also time taken to go there. Indirectly, this Air Transit Trip Planner application also helps to boost economy in the tourism sector of a country

Functional Requirements

1. A 'Main Page' which the user will see when they launch the application. In the background when this interface prompts, the system actually will automatically detect user current location by using GPS or Google Places. If no internet access or GPS is turn off, the system will prompt a pop up asking the user to turn on GPS or connect to internet. But if everything is fine, user just need to key in their transit hour and departure time then click enter.
2. A 'Tourism places' page will calculate how many tourisms places the user can visit within the transit hour they have by using the algorithm.
3. A 'place details' page will direct to new user interface with scrollable list view.
4. A 'pop up' page when user click each mark on map. When the user clicks the mark, the pop up will show the address of each location.
5. A 'GPS Navigation' page is using satellite and it is implementing context awareness concept where it will direct user to their destination. This interface also has voice navigation which will help the user to hear the navigation while driving rather than looking at the map continuously.

Reports

1. Passenger Report
2. Flight timing Report
3. Near by tourism places Month Report

See also for authentic understanding, click the link

<https://travelplanner.co.in;>
<https://www.expedia.com;>
<https://www.orbitz.com;>
<https://www.kayak.com> and so on.

Each student has to refer any one of the web sites stated above.

18. Restaurant Reservation and Table Management Solutions

Objective: Restaurant Reservation and Table Management system is a Web application designed to help you (and your coworkers) to select the restaurant you are going to eat in. You can manage users, restaurants, menus, prices, give notations to each lunch, etc.

Functional Requirements

1. Reservation Management

- a. Easily enter or modify reservations while viewing guest histories.
- b. Capture phone numbers, email and mailing addresses.
- c. Allow management blocking and VIP pre-assignments.
- d. Reduce no-shows with enhanced customer tracking.
- e. Take reservations from your website or Open Table 24 hours.

2. Table Management

- a. Maximize seat utilization with walk-in and waitlist functionality.
- b. Instantly track covers for more efficient kitchen and server management. Increase table turns by tracking party status. Store multiple reservation sheets for holidays and special events.
- c. Hold and combine tables for large parties.
- d. Record and view shift notes for each day

3. Guest Management

- a. Identify regulars and VIPs
- b. Track customer preferences to meet and anticipate special requests

- c. View customer reservation histories at-a-glance
- d. Track special occasions such as guest birthdays and anniversaries Marketing Management
- e. Conduct powerful email marketing campaigns to increase repeat business.
- f. Print mailing labels to reach select target audiences.
- g. Track and reward concierge business.

4. Increase control

- a. Manage reservations from the back-office or any other location. Simultaneously control multiple restaurants from key centralized locations.
- b. Share guest data across sister restaurants.

Reports

- 1. Day wise customer Report
- 2. No. of tables filled Report
- 3. VIP's Report

See also for authentic understanding, click the link

[https://www.elluminatiinc.com/restaurant-reservation-system/;](https://www.elluminatiinc.com/restaurant-reservation-system/)
[https://restaurant.opentable.com/;](https://restaurant.opentable.com/)
[https://www.tornosubitodubai.com/;](https://www.tornosubitodubai.com/)
<https://indiarestaurant.co.in/> and so on.

Each student has to refer any one of the web sites stated above

19. Stay safe women security application

Objective: Build stay safe women security project is used to provide highly reliable security system for the safety of women. The proposed system is based upon advanced sensors and GPS. The basic aim of the system is to develop a low cost solution for GPS based women tracking system (Women Safety System). The main objective of the system is to track the current location of the person which has an android enabled mobile by extracting the longitude and latitude of that target person.

Functional Requirements

1. A 'Scream Alarm' page used perfect for the females as well as other users that need some kind of safety alarm in case they found out that someone is following or stalking them. It also consists of two other types of scream alarm. It's an initial distraction which will buy some time and allow the user to escape from the trouble.

- a. Male voice scream
- b. Police siren.

The user could select one of his/her choice from the "Settings" of the application, as keeping in mind the two other scream alarms are also added in this application as now a days safety and security is everybody's concern.

2. A 'Fake Call Timer' page which the fake call timer allows the user to make fake calls in the time of need. It helps user to escape from an undesirable situation citing an important call from anyone who needs him/her urgently and rest depends upon user creativity. This feature also helps the user to escape from boring social events

In order to make a fake call the user have to select the "Fake Call" icon and after that user could write any name from which he/she wants a fake call. User could also set up the timer as per the requirement. The user could also set the default timer from the "Settings" icon of the application.

In a critical situation, the user just have to long term press the fake call button and automatically get a fake call as per the desired selected timer in the settings.

3. A 'Where Are You' which is used to find track friend. While first request is send by the sender. The sender will have to select the "Where Are You" icon and then a new dialog box of "Pick a Friend" will open up. The sender could select any friend and the request will be sent to the receiver. The receiver will accept that request from their end and a message will be sent to the receiver with the present location of the user.
4. A 'Track Me' which will track the user to view the exact dynamic location of the victim. First user have to send the Track Me request at the receivers end. The receiver will accept the request and then his/her name will appear on the friends you are tracking on the bottom of the application. The user could select that friend from there and then it will get automatically re-directed to the Google maps from where the user could view the exact location of the victim and also where's he/she heading to.
5. A 'Friends List' page which shows all the contact numbers of family and friends which are added by the user through contacts. This could be done by selecting the contact icon on the bottom right corner of the friends list.
6. A 'Settings' page which consists of the following features -:
 - a. A 'Emergency Services' page allows the Stay Safe Application to send emergency notifications and SMS with the exact location to the emergency contacts.
 - b. A 'Low Battery Alert' page alert feature allows the Stay Safe Application to send low battery alert and SMS to the emergency contacts.
 - c. A 'Set Scream Sound' page which the user could select any scream sound as per the requirement.
 - d. A 'Fake Call Timer (On Long press)' page which the user could set the fake call default timer as per the requirement.
7. A 'Emergency Distress Signal (SOS)' which the distress signal will be generated by the user in case of an emergency. In order to generate the distress signal the user have to shake up his/her phone, then a distress signal will appear at the user end with a default timer of 5 sec. In the end distress signal will be sent to the emergency contacts added by the user at the time of registration. The application send SMS and user details as well as the exact location of the user through a push notification at the receiver end, before sending a distress signal the user first have to turn on the emergency services from the settings of the application.

Reports

1. Day wise women registered Report
2. emergency notifications Report

See also for authentic understanding, click the link

<https://womensafetywing.telangana.gov.in>;
<https://nirbhayaapp.com>; <https://safetipin.com>;
<https://wsww.smart24x7.com> and so on.

Each student has to refer any one of the web sites stated above

20. Secure Stock Exchange System using Web Services

Objective: This project implements a stock exchange is simply a system that is designed for the sale and purchase of securities of corporations and municipalities. A stock exchange sells and buys stocks, shares, and other such securities. In addition, the stock exchange sometimes buys and sells certificates representing commodities of trade

Functional Requirements

1. Stock Markets & Investments

- a. Stock Exchange Listing
- b. Stock Options & Analysis

- c. Stock Market Crash
- d. Selling Stock Certificates
- e. Stock Market Forecasts

2. Stock Options

Types of Stocks

- a. Stock Option Valuation
- b. Restricted Stock Options

3.Related Information

- a. Day Trading Stocks
- b. Stock Quotes & Stock Ticker
- c. Stock Charts
- d. Share Portfolio Management

Reports

- 1. Day wise sellers Report
- 2. Day wise buys Report
- 3. Shares report

See also for authentic understanding, click the link

<https://stocksandsecurities.adityabirlacapital.com/>;

<https://www.nseindia.com/>;

<https://www.jpx.co.jp/english/>;

<https://www.mstock.com/> and so on.

Each student has to refer any one of the web sites stated above.

21.Final Notes

Web development refers to the creating, building, and maintaining of websites. It includes aspects such as web design, web publishing, web programming. It is the creation of an application that works over the internet i.e. websites.

- The ACM - ICPC International collegiate programming contest (<https://icpc.global/>)
- The Topcoder Open (TCO) annual programming and design contest (<https://www.topcoder.com/>)
- Universidad de Valladolid's online judge (<https://uva.onlinejudge.org/>).
- Peking University's online judge (<http://poj.org/>).
- USA Computing Olympiad (USACO) Training Program @ <http://train.usaco.org/usacogate>.
- Google's coding competitions (<https://codingcompetitions.withgoogle.com/codejam>, <https://codingcompetitions.withgoogle.com/hashcode>)
- The ICFP programming contest (<https://www.icfpconference.org/>)
- BME International 24-hours programming contest (<https://www.challenge24.org/>)
- The International Obfuscated C Code Contest (<https://www0.us.ioccc.org/main.html>)
- Internet Problem Solving Contest (<https://ipsc.ksp.sk/>)
- Microsoft Imagine Cup (<https://imaginecup.microsoft.com/en-us>)
- Hewlett Packard Enterprise (HPE) Codewars (<https://hpecodewars.org/>)
- Open Challenge (<https://www.openchallenge.org/>)

Student must have any one of the following certifications:

- Udemy- Web Development Masterclass
- coursera – Web Design for Everybody: Basic of Web Development and Coding
- NPTEL – Introduction to Modern Application Development.

V. TEXT BOOKS:

1. Thomas A. Powell, “*The Complete Reference*”, “HTML and CSS”, 5th edition, 2017
2. Elisabeth Robson , Eric Freeman,”*Head First HTML and CSS: A Learner's Guide to Creating Standards-Based Web Pages*”, 2nd edition, 2012
3. Adam Boduchand Roy Derks, “*React and React Native: A Complete Hands-on Guide to Modern Web and Mobile Development with React.js*”, 3rd edition, 2020.

VI. REFERENCE BOOKS:

1. W Hans Bergsten, “*Java Server Pages*”, O‘ Reilly, 3rd edition, 2003.
2. D. Flanagan, “*Java Script*”, O‘Reilly, 6th edition, 2011.
3. Jon Duckett, “*Beginning Web Programming*”, WROX, 2nd edition, 2008.

VII. ELECTRONICS RESOURCES:

1. <https://www.codecademy.com/learn/paths/web-development/>
2. <https://nptel.ac.in/courses/106/105/106105084/>
3. <https://medium.com/@aureliomerenda/create-a-native-web-app-with-react-native-web419acac86b82>
4. <https://www.coursera.org/learn/react-native>
5. <https://desirecourse.net/react-native-and-redux-course-using-hooks>

VIII. MATERIALS ONLINE

1. Course template
2. Lab Manual