

# SEN2022 SOFTWARE ENGINEERING ANALYSIS AND DESIGN

## PROJECT DETAILS

**Important Note:** Read the “Assignments and Project Deadline” part of the “Course Policy” section given in the syllabus and follow the below steps to prepare your project report and presentation.

1. Organize your team with four members and select a team manager.
2. Choose three project topics from the list given in this file and write your first choice at the first place in your list.
  - a) One of these three topics will be assigned to your team.
  - b) A project topic can be chosen by at most four different teams.
3. Team manager will send the list of team members and the list of project topics in an Itslearning message until **October 31, 2021 Sunday**.
4. If you cannot find a team, send an Itslearning message until **November 1, 2021 Monday**.
  - a) You will be assigned to a team.
5. Find a name for your target application and use that name in your report and presentation.
6. There are four chapters in the project report and each student is responsible of preparing a report for a different chapter using the template given in this file.
  - a) Team manager is responsible of preparing a report for Chapter#1; managing the team members for discussions, brainstorming and sharing findings; and organizing the team to complete the missing chapter(s).
  - b) Student#2 is responsible of preparing a report for Chapter#2, Student#3 is responsible of preparing a report for Chapter#3, and Student#4 is responsible of preparing a report for Chapter#4.
7. Each student will submit the report with the presentation of his/her own chapter as a **single mp4 file** using the *Project Report and Presentation* link in Itslearning until **January 14, 2022 Friday**.
  - a) Each student will prepare the report for his/her own chapter as powerpoint slides using the template given below and then record a narration on the powerpoint slides as mp4 which is no more than five minutes.
  - b) All diagrams on the slides must be readable. If necessary, you can split the diagram into more than one slide.
  - c) You can use the following materials about how to prepare powerpoint presentations as mp4.
    - (i) <https://support.office.com/en-us/article/turn-your-presentation-into-a-video-c140551f-cb37-4818-b5d4-3e30815c3e83>
    - (ii) <https://support.office.com/en-us/article/basic-tasks-for-creating-a-powerpoint-presentation-efbbc1cd-c5f1-4264-b48e-c8a7b0334e36>
    - (iii) <https://support.microsoft.com/en-us/office/record-a-slide-show-with-narration-and-slide-timings-0b9502c6-5f6c-40ae-b1e7-e47d8741161c>

# PROJECT REPORT TEMPLATE

## Chapter#1: Project Management and Requirements Analysis → Team Manager

- a) Project Definition
- b) Project Purpose
- c) Project Scope
- d) Project Constraints
  - i) Define problem specific constraints
- e) Actor Glossary
  - i) Define at least 3 actors
- f) Non-functional Requirements
  - i) Define at least 4 problem specific requirements.
  - ii) Do not use the examples given in the lecture notes.
- g) Functional Requirements
  - i) Define at least 5 problem specific requirements.
  - ii) Do not use the examples given in the lecture notes.
  - iii) Sign in, sign out, sign up, register, change password and similar functions are not accepted.

## Chapter#2: Use Case Modeling → Student#2

- a) User Stories
  - i) Write at least 5 problem specific stories.
  - ii) Take the requirements defined in Chapter#1 into consideration when preparing user stories.
- b) Scenarios
  - i) Prepare a scenario (with sections; use case name, description, primary actors, supporting actors, triggers, preconditions, postconditions, normal flow, alternate flows, business rules) for each user story
- c) Use Case Diagram

## Chapter#3: Data Modeling → Student#3

- a) Activity Diagrams
  - i) Draw an activity diagram for each scenario given in Chapter#2.
- b) Sequence Diagrams
  - i) Draw a sequence diagram for each scenario given in Chapter#2.

## Chapter#4: Process Modeling → Student#4

- a) Context Level DFD
  - i) The content must be consistent with the findings of the first three chapters.
- b) Level-0 DFD
  - i) The content must be consistent with the findings of the first three chapters.

## LIST OF PROJECTS

**PROJECT#1 - Task Monitoring System:** This project is about tracking and monitoring of day-to-day activities of the daily life. This project focuses on developing a Weekly Task Alerting System for mobile devices that can alert users of the tasks/appointments that are scheduled for each day in a week.

**PROJECT#2 - Online Voting System:** This project is about a software platform that allows people to securely conduct elections. Ballots must be built to let people vote on things or elect people. The individuals who are eligible to vote on ballots need to be uploaded into the voting system. You may have the option of grouping these individuals into different segments (e.g. region, department). The system shall let voters know about upcoming votes and elections. The system shall also remind those that haven't voted. After voting is ended, the system shall share the results with the voters.

**PROJECT#3 - Online Medical Scheduling System:** This project is a computer system that will be used in the hospitals. This project aims to develop a system that provides automated case management, patient scheduling, diagnosis notes, electronic mail integration to remind patient about their appointment, electronic revisit letter with paperless environment, inventory for spectacles, lenses and sundries and unlimited custom and pre-built reports.

**PROJECT#4 - Electronic Learning System:** e-learning is an approach where learning materials are made accessible online via electronic devices. It can be delivered in various formats such as presentations, videos, online courses, virtual activities, and many more. It is a flexible learning solution that you can set up whether for self-paced learning or synchronous learning. This project aims to develop an e-learning system as an educational platform that provides tools to publish materials in many different formats and to give synchronous virtual lectures.

**PROJECT#5 - Online Recruitment System:** Online recruitment is aimed at developing an application and central recruitment process system for the HR Group for a company. Some features of this system are creating vacancies, storing application data. It also allows end to end hiring process protocols till finally hiring the applicant. This project online recruitment system is an online website in which job seekers can register themselves and then attend the exam. Based on the outcome of the exam the job seekers will be short-listed. The details of the examination & date of the examination will be made available to them through the website. People all around the world can apply and register.

**PROJECT#6 - Voyage Management System:** In general, if any user plans for any tour they must consult any traveling agency for purchasing package. The user has to do traveling reservations from source to destination. At the same time, the user has to hotel reservations at destination place other travel reservations from destination to other places. This involves lot of manual work. For all these type of reservations must be done by user by standing lot of time in a queue. Voyage Management is the travel agency which gives all the required facilities to their customers when they are ready to plan for any tour. By using this portal, the user can book any travel packages, they can reserve their tickets for any travel, they can book hotels and also it provides help to the users.

**PROJECT#7 - Enterprise Fleet Management System:** Fleet (vehicle) management can include a range of functions, such as vehicle leasing and financing, vehicle maintenance, licensing and compliance, supply chain management, accident management and subrogation, vehicle telematics (tracking and diagnostics), driver management, speed management, fuel management, health and safety management, and vehicle re-marketing. This project aims to develop a fleet management system which allows companies to manage the abovementioned services.

**PROJECT#8 - Online Auction System:** This is a system where seller and buyer come together to complete the deal. The potential bidders should be able to browse through website for desired product, put a bid through a secure server. In the auction system a seller posts the details of product for sale, and multiple potential buyer put their bid price. The auction can be limited for certain period. There may be different conditions as per the online auction system needs. The newly requested price can be more, lesser etc. as per the business logic, and can be handled easily. Online auction is essentially a specific version of e-commerce system where the sellers and buyers are multiple. There may be variety of sellers and as per their needs, different types properties can be applied to the product for sale.

**PROJECT#9 – Criminal Investigation Tracker System:** This project is about a criminal investigation tracker system that tracks the investigation status of criminal cases with logs. The system is proposed to help agencies to speed up investigation process and track status of multiple cases at a time. The system keeps logs of a case which includes case summary, people involved, disputes, past criminal history of those involved, items recovered on scene and other details. The system realizes the type of case, allows users to update the status of investigation, upload more images of crime, items found on scene etc. This allows authorized officers to check case status and look into its status online and also update any important info as and when needed. The system is designed to aid investigation teams to work collectively on cases.

**PROJECT#10 - Online Food Ordering System:** This project aims to develop a system that focuses on quick preparation and speedy delivery of food orders. On the ordering website, the products are presented with an interactive and up-to-date menu, complete with all available options and dynamically adjusting prices based on the selected options. After making a selection, the item is then added to their order, which the customer can review the details of the order at any time before checking out. The system will also lighten the load on the restaurant's end, as the entire process of taking orders is automated. Once an order is placed on the customer's system, the details of that order will also be seen on the restaurant's screen. This will allow the restaurant to quickly go through the orders as they are placed and produce the necessary items with minimal delay and confusion.

**PROJECT#11 - Event Management System:** The main purpose of event management system is to provide an application for the users to view the information about the events that took place in the past and the ones which are about to take place in the near future. The users can first login into the website and see through the information such as details about the events like the venue, theme of the event, participants, chief guests, etc. The system will also allow the users to buy tickets for the upcoming events.

**PROJECT#12 - Online Test Management System:** This project aims to provide an online system for candidates to attend tests, to enable the application owner to effectively manage, creation and assignment of tests, to enable the application owner to create customized tests, choosing questions depending on the skills being tested, to completely automate the process right from creating tests to the point when the completed tests are evaluated.

**PROJECT#13 - Summer Training Tracking System:** This project aims to track the operations processed by faculty, company and students. Students are usually assigned to be trained in industrial or governmental bodies for a specific time period. The university needs an automated system that helps the faculty to manage this process automatically by allowing the students to register to the course, follow the announcements, submit the report, the faculty to contact, make announcements, assign tasks, evaluate the reports and the supervisors to follow up.

**PROJECT#14 - Customer Relationship Management System:** Customer relationship management (CRM) is a system for managing a company's interactions with current and future customers. A CRM system helps companies stay connected to customers, streamline processes, and improve profitability. This project aims to use technology to organize, automate, and synchronize sales. Company employee must keep track of current and future customers to synchronize sales. CRM System helps to keep track of number of leads converted by the employee.

**PROJECT#15 - Project Management System:** This project is about to automate the status tracking of various projects dealt by enterprise software solutions. This system typically enables the top level management to keep track of the status of the projects under their control. Some of the critical activities that can be performed with this system are monitoring the completion status of project documents, to alert Project Leader (PL) indicating the documents completion dates. Human Resources (HR) allocates projects to Group Leader (GL), PL of a particular client with project code, project name and start date of the particular project. The system keeps tracks of the documents that have to be completed within a particular duration. PL gets the intimation before two days of each documents completion date. This notifies the PL to complete his schedule on time. The system helps the actors to view the status of the project and helps in tracking information about the project.