CS6110

OBJECT ORIENTED ANALYSIS & DESIGN

LAB - EXERCISE

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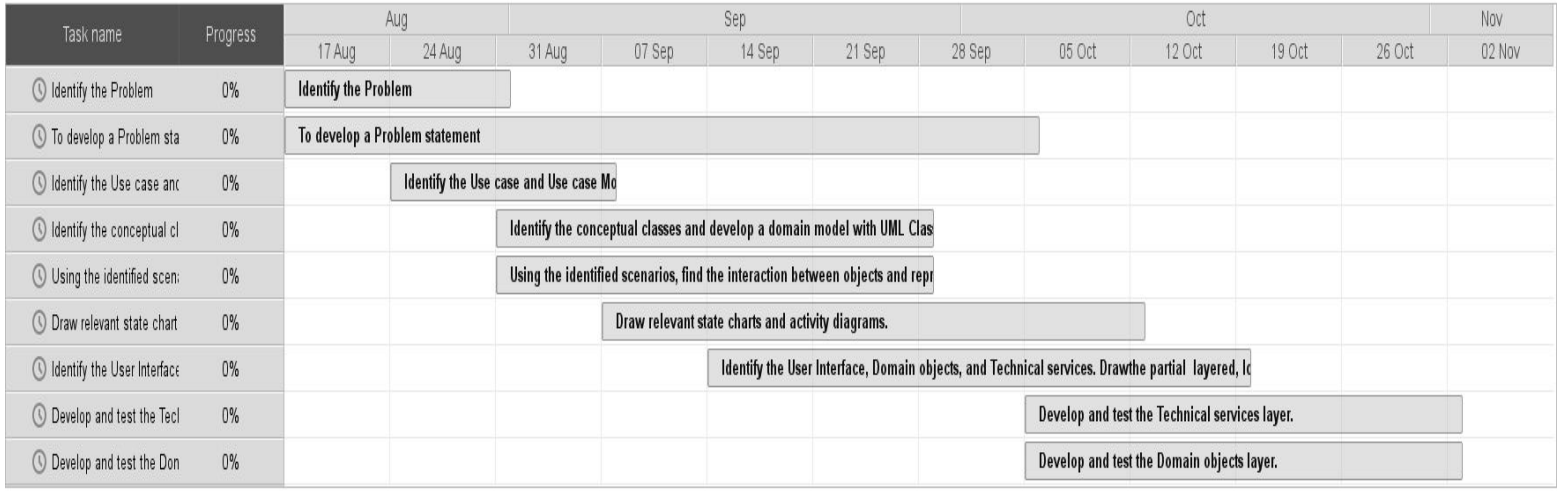
LAB - OOAD

1. To develop a problem statement.
2. Develop an IEEE standard SRS document. Also develop risk management and project plan (Gantt chart).
3. Identify Use Cases and develop the Use Case model.
4. Identify the business activities and develop an UML Activity diagram.
5. Identity the conceptual classes and develop a domain model with UML Class diagram.
6. Using the identified scenarios find the interaction between objects and represent them using UML Interaction diagrams.
7. Draw the State Chart diagram.
8. Identify the User Interface, Domain objects, and Technical services. Draw the partial layered, logical architecture diagram with UML package diagram notation.
9. Implement the Technical services layer.1
10. Implement the Domain objects layer.
11. Implement the User Interface layer.
12. Draw Component and Deployment diagrams.

Tool Used

- Star UML
- Plan your work using Planhammer online tool

  https://planhammer.io/signin



1. DEVELOP A PROBLEM STATEMENT

Date : 21/08/2020 Time : 1.10 PM to 4.30PM

Sample :

Problem : PASSPORT AUTOMATION SYSTEM

Aim: To develop a project for online passport automation system using staruml

2. System Requirement Specification (SRS):

Date : 21/08/2020 Time : 1.10 PM to 4.30PM

Sample :

Problem : PASSPORT AUTOMATION SYSTEM

Problems Analysis and Project Planning

1. Introduction

This system deals with online passport automation for the applicant .

Online passport automation system has been defined online passport automation process in their houses through internet .

Therefore, the online passport automation process can be done efficiently in advance and without much of delay.

The use case descriptions and other documents are described in such a way that the user understand it and finds it easy to use.

2. System Requirement Specification (SRS):

Date : 21/08/2020 Time : 1.10 PM to 4.30PM

Sample :

Problem : PASSPORT AUTOMATION SYSTEM

Problems Analysis and Project Planning

1.2. Objective

The purpose of this document is to define the requirements of online passport automation system. This system contains the details about the applicant, appointment date & time and the date of expiry

2. System Requirement Specification (SRS):

Date : 21/08/2020 Time : 1.10 PM to 4.30PM

Sample :

Problem : PASSPORT AUTOMATION SYSTEM

Problems Analysis and Project Planning

1.3. Scope

In the online passport automation system, the applicant should enter their details, submit the form in the database and the applicant should attend the verification process.

2. System Requirement Specification (SRS):

Date : 21/08/2020 Time : 1.10 PM to 4.30PM

Sample :

Problem : PASSPORT AUTOMATION SYSTEM

Problems Analysis and Project Planning

1.4. Problem Statement

- The online passport automation system deals about applying and renewing the passport for submitting the applicant details to the administrator and confirming it by the police
- This system tries to use any kind of interface as simple as possible and at the same time not risking the security of data stored in the database.
- The system will retain information on the entire applicant who has necessary rights to apply for the passport. The particular applicant should have a nationality.
- If the entire process of "Issue of Passport" is done in a manual manner then it would take several months for the passport to reach its applicant.
- An automatic system is essential to meet the rising demand.
- For security purpose, only the administrator is allowed to maintain the applicant details.
- The applicant details are stored in a highly secured database, so that it cannot be illegally accessed

2. System Requirement Specification (SRS):

Date : 21/08/2020 Time : 1.10 PM to 4.30PM

Sample :

Problem : PASSPORT AUTOMATION SYSTEM

Problems Analysis and Project Planning

1.4. Problem Statement

- The online passport automation database administrator maintains all the applicant and passport details.
- The administrator takes care of adding or deleting the applicant details, modifying the data, renewing the passport.
- He should be able to monitor the overall progress of the system.
- Administrator is responsible for the entire process within the system.
- Online passport automation system enables us to save time, reduce the workload and process application. This system is efficient in the way that there is no manual intervention.
- This system provides instant and accurate results for applying the passport online.
- Finally, these systems aim at improving the efficiency in the issue of passport and reduce the complexities involved in it to the maximum possible extent

WORK TO BE COMPLETED ON 21/08/2020

- Identify the problem
- Write the Introduction, about the problem
- Identify the objective
- Scope of the identified problem
- Detailed problem statement
- Explore the Gannt Chart and plan your work , it should be reflected in your presentation.

Note : Each one of you will prepare the presentation for the laboratory work with the above details and get evaluated with your teaching assistant.

DATE : 28/08/2020

IME : 1.10 PM TO 4.30PM

1. Problem Statement (Use case) Analysis:

Date : 17/09/2020 Time : 1.10 PM to 4.30PM

Sample :

Problem : PASSPORT AUTOMATION SYSTEM

Aim: To develop a project for online passport automation system using staruml

USE CASE DIAGRAM:

- Use Case diagrams identify the functionality provided by the system (use cases), the users who interact with the system (actors), and the association between the users and the functionality.
- Use Cases are used in the Analysis phase of software development to articulate the high-level requirements of the system.

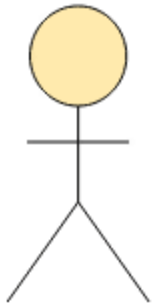
- The primary goals of Use Case diagrams include:
  - Providing a high-level view of what the system does
  - Identifying the users ("actors") of the system
  - Determining areas needing human-computer interfaces.

GRAPHICAL NOTATION:

The basic components of Use Case diagrams are the **Actor, the Use Case, and the Association**.

Actor:

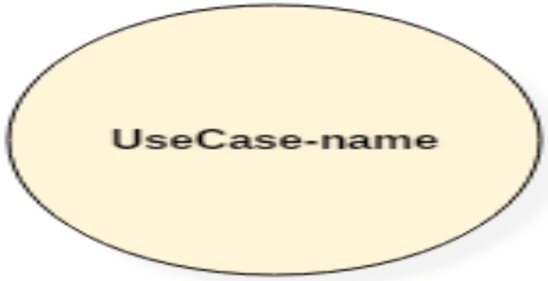
An Actor, as mentioned, is a user of the system, and is depicted using a stick figure. The role of the user is written beneath the icon. Actors are not limited to humans. If a system communicates with another application, and expects input or delivers output, then that application can also be considered an actor.



Graphical Notation

Use Case:

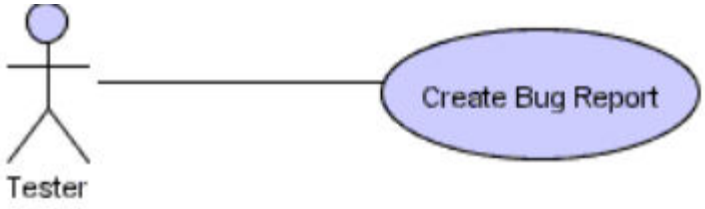
- A Use Case is functionality provided by the system, typically described as verb + object
- use Cases are depicted with an ellipse. The name of the use case is written within the ellipse



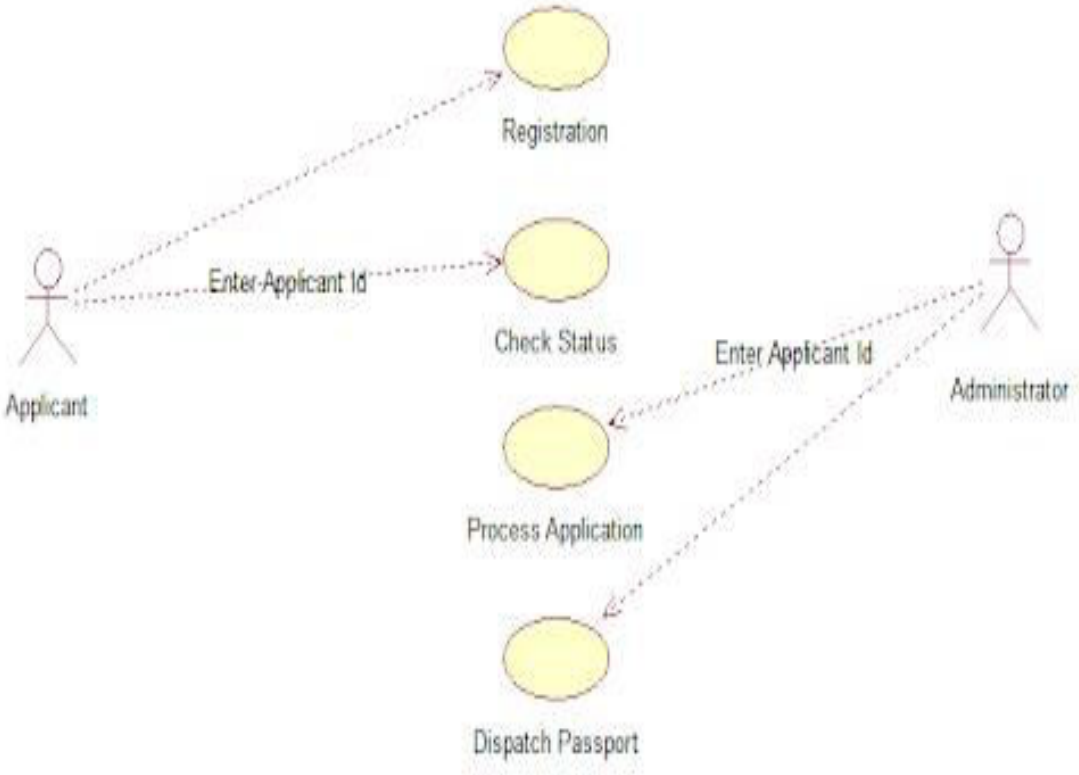
Graphical Notation

Association:

- Associations are used to link Actors with Use Cases, and indicate that an Actor participates in the Use Case in some form. Associations are depicted by a line connecting the Actor and the Use Case.



EXAMPLE


Registration
Enter Applicant Id
Check Status
Applicant
Enter Applicant Id
Administrator
Process Application
Dispatch Passport

Use case diagrams are helpful in three area

- Determining features (requirements). New use cases often generate new requirements as the system is analyzed and the design takes shape.
- Communicating with clients. Their notational simplicity makes use case diagrams a good way for developers to communicate with clients.
- Generating test cases. The collection of scenarios for a use case may suggest a suite of test cases for those scenarios

2.1 Identified Use cases

2. 1. Applicant Details:

- This use case allows the applicant to enter the details such as name, gender, age, address, contact details, etc.
- 2.2. Status Enquiry: This use case includes the process of applying and renewing the passport.
- 2.3. Generate Unique Id: This use case generates and issues the unique id for each applicant.
- 2.4. Verification: This use case allows the administrator to verify the details of applicant.
- 2.5. Confirmation: This use case explains the confirmation process done by the police.

2.2 Identified Actors

- 2.1. Applicant: The applicant is the primary actor who decides whether to apply or renew the passport.
- 2.2. Administrator: This supporting actor is responsible for the entire process involved in the online passport automation system.
- 2.3. Database: This offstage actor contains all the information about the applicant and passport.
- 2.4. Police: This actor will confirm the verified details.