Design Document

Project Name:

"Online Service System"

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Abstract

Online Service Management System is a project which aims in developing an online application to maintain all daily work of service center. This project has many features which are generally not available in normal Online Service Management System like product/parts record. It also has a facility of admin login through which the admin can monitor the whole system. This project is being developed to help the service center to maintain the Service Center in the best way possible and also reduce the human efforts.

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Chapter 1

Introduction:

Purpose of Document:

The Software Design Document is a document to provide documentation which will be used to aid in software development by providing the details for how the software should be built. StarUML tool is used to design the diagrams.

Scope of the Project:

The Online Service Management System is a web application which maintains all the daily work of service center of electronic items. Through website a customer can request for service of their electronic item along with the description of the defector problem in the item. The request is handled by admin which assigns technicians or workers for the services, OSMS also maintains the data of assets so that the items having warranty can easily be replaced. Customer can view their requests and the assigned technicians.
The main purpose of the development of OSMS is to provide a user friendly environment with quick response to the customer for the maintenance or replacement of their electronic items.

Definitions and Abbreviations:

- **OSMS:** *Online Service Management system*
- **DFD:** *Data Flow Diagram*, A data flow diagram shows the way information flows through a process or system. It includes data inputs and outputs, data stores, and the various sub processes the data moves. These diagrams are used to map out an existing system and make it better or to plan out a new system for implementation.
- **UI:** *User Interface*, is the point of human-computer interaction and communication in a device.
- **PHP:** *Hypertext Preprocessor*, PHP is a server scripting language, and a powerful tool for making dynamic and interactive Web pages.
- **HTML:** The *Hypertext Markup Language*, HTML is the standard markup language for documents designed to be displayed in a web browser.
- **CSS:** Stands for *Cascading Style Sheet* are used to format the layout of Web pages.
- **Latex:** A document formatting tool to prepare documents.
- **Xampp:** It is an open-source package which helps a local host or server to test its website and clients via computers and laptops before releasing it to the main server.

- **Object Oriented Design:** It is the process of using an object-oriented methodology to design a computing system or application. This technique enables the implementation of a software solution based on the concepts of objects.
- **Class Diagram:** It is the main building block of object-oriented modeling. It is used for general conceptual modeling of the structure of the application, and for detailed modeling, translating the models into programming code.
- **Data Dictionary:** It is a collection of names, definitions, and attributes about data elements that are being used or captured in a database.
- **Functional Modeling:** It is a structured representation of the functions (activities, actions, processes, operations) within the modeled system.
- **Behavioral Modeling:** It is specially designed to make us understand behavior and factors that influence behavior of a system. It usually describes overall states that a system can have and events which are responsible for a change in state of a system.
- **State Transition Diagram:** It describes all of the states that an object can have, the events under which an object changes state (transitions), the conditions that must be fulfilled before the transition will occur (guards), and the activities undertaken during the life of an object (actions).
- **Interaction Modeling:** It is a design model that binds an application together in a way that supports the conceptual models of its target users.
- **Use Case Diagram:** Use-case diagrams describe the high-level functions and scope of a system. These diagrams also identify the interactions between the system and its actors.
- **Sequence Diagram:** They illustrate how the different parts of a system interact with each other to carry out a function, and the order in which the interactions occur when a particular use case is executed.
- **Component Deployment Diagram:** A component is a *code module*. Component diagrams are physical analogs of class diagram. Deployment diagrams show the physical configurations of software and hardware. The physical hardware is made up of nodes, each component belongs on a node.
- **StarUML:** StarUML is build as a modular and open tool. It provides frameworks for extending the functionality of the tool. It provides extension of menu and option items.

References:

The following references are being used to develop the "*Online Service System*":

- IEEE. IEEE STD 830-1998 IEEE Recommended Practice for Software Requirements Specifications. IEEE Computer Society, 1998.
- The complete reference PHP
- https://www.tutorialspoint.com/
- https://www.google.co.in./

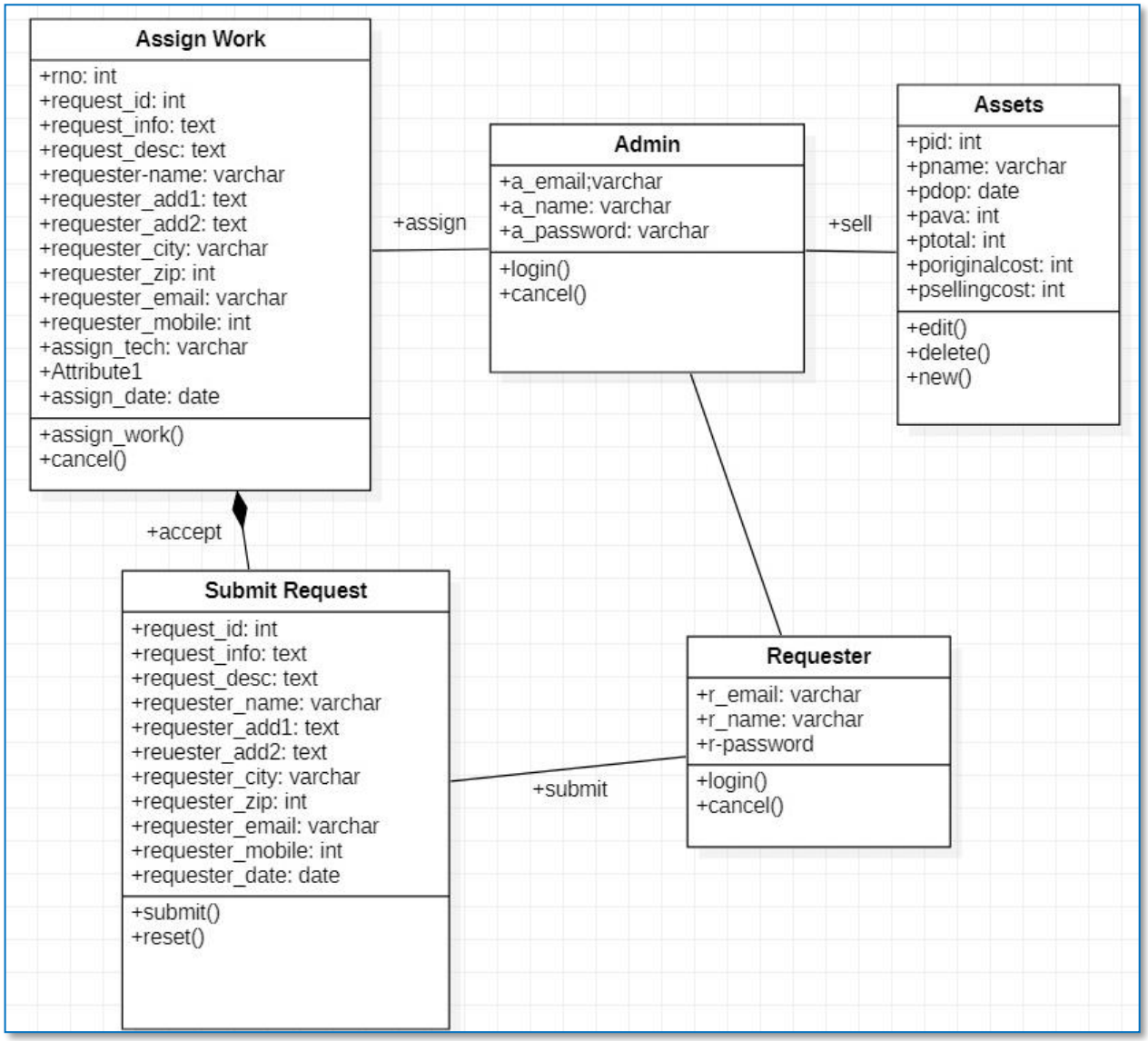
Document Overview:

- **Chapter 1:** It is just an *introduction* and discussion about purpose of the document and scope the project, some definitions, acronyms and abbreviations related to document.
- **Chapter 2:** In this chapter, we create the *Object Oriented Design* that are *Class Diagram* and *Data Dictionary*. These designs represents the entities, attributes and function of the project.
- **Chapter 3:** In this, we design *Functional models* that are *Data Flow Diagrams of Level 0, 1 & 2*. It describes the over view of the whole system.
- **Chapter 4:** It is the *Behavioral model* in which we describe the different state of the project with the help of *State Transition Diagram*.
- **Chapter 5:** It is an *Interaction model* in which elaborate the project with help of *Use case Diagram* and *Sequence Diagram*.
- **Chapter 6:** In this chapter, we provide *Deployment View* with the help of *Component Deployment Diagram*. It shows the physical configurations of software and hardware. The physical hardware is made up of nodes, each component belongs on a node.

Chapter 2

Object Oriented Design:

Class Diagram:



Data Dictionary:

Table 1 Admin

Entity name	Entity description	Field name	Data type	Field length	Constraint	Field description
Admin	An admin who monitors the whole system	a-login-id	integer	08	Primary key	Stores login id (Automatically Generated)
		a-name	varchar	60	Not null	Stores admin name
		a-email	varchar	60	-	Stores admin email
		a-password	varchar	09	Not null	Store admin password

Table 2 Requester

Entity name	Entity description	Field name	Data type	Field length	Constraint	Field description
Requester	The people who are registered in our web-site and requests for maintenance or replacement of electronic item	r-login-id	integer	08	Primary key	Stores requester login id (Automatically Generated)
		r-name	varchar	60	Not null	Stores requester name
		r-email	varchar	60	-	Stores requester email
		r-password	varchar	09	Not null	Store requester password

Table 3 Customer

Entity name	Entity description	Field name	Data type	Field length	Constraint	Field description
Customer	The people who are the customer of our service system.	cust-id	integer	08	Primary key	Stores customer id (Automatically Generated)
		cust-name	varchar	60	Not null	Stores customer name
		cust-address	varchar	60	Not null	Stores customer address
		cp-name	varchar	60	Not null	Stores product name
		cp-quantity	integer	09	Not null	Stores product quantity
		cp-each	integer	60	-	Stores each quantity price
		cp-total	integer	60	-	Stores total price
		cp-date	date	20	Not null	Stores selling date

Table 4 Assets

Entity name	Entity description	Field name	Data type	Field length	Constraint	Field description
Assets	It contains the details of products.	p-id	integer	08	Primary key	Stores product id(Automatically Generated)
		p-name	varchar	60	Not null	Stores product name
		p-ava	integer	60	-	Stores number of available products
		p-total	integer	60	-	Stores number of total products
		p-original-cost	integer	60	-	Stores product of original cost
		p-selling-cost	integer	60	-	Stores product selling price
		p-date	date	20	Not null	Stores product date

Table 5 Technician

Entity name	Entity description	Field name	Data type	Field length	Constraint	Field description
Technician	It contains the details of the technicians who are going to be assigned some work	emp-id	integer	08	Primary key	Stores employee id (Automatically Generated)
		emp-name	varchar	60	Not null	Stores Employee name
		emp-email	varchar	60	-	Stores Employee email ID
		emp-city	varchar	09	Not null	Store Employee city
		emp-mobile	bigint	20	-	Stores Employee mobile number

Table 6 Submit-Requester

Entity name	Entity description	Field name	Data type	Field length	Constraint	Field description
Submit-Requester	It contains all the details of the customer for the registration.	request-id	integer	08	Foreign key	Request id (Automatically Generated)
		request-info	text	-	-	Request information
		request-desc	text	60	-	Request Description
		requester-name	varchar	60	Not null	Requester name
		requester-add1	text	-	-	Requester address line 1
		requester-add2	text	-	-	Requester address line 2
		requester-city	varchar	60	-	Requester city
		requester-state	varchar	60	Not null	Requester state
		requester-zip	integer	-	-	Requester zip
		requester-email	varchar	60	-	Requester email
		requester-mobile	bigint	-	-	Requester mobile number
		request-date	date	20	Not null	Request date

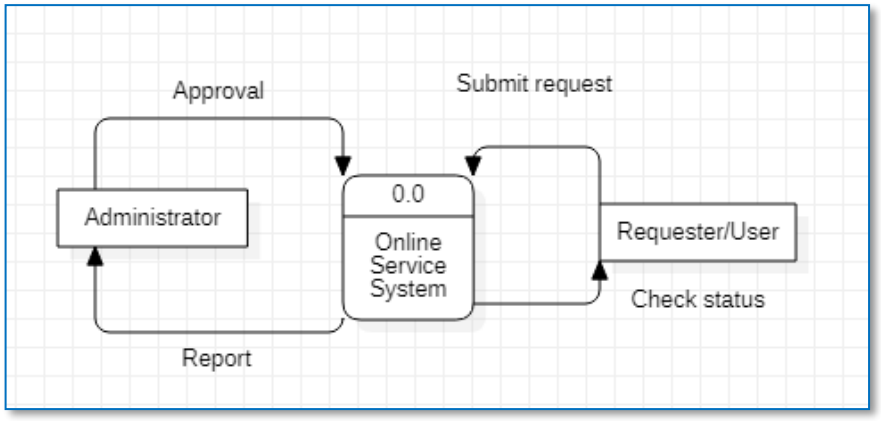
Table 7 Assign-Work

Entity name	Entity description	Field name	Data type	Field length	Constraint	Field description
Assign-Work	It contains all the details of the requester and technician for assigning work to the technician with the respective requests	r-no	integer	60	Primary key	Request number (Automatically Generated)
		request-id	integer	60	Not null	Request ID
		request-info text	text	-	-	Request information
		requester-name	varchar	60	Not null	Requester name
		requester-add1	text	-	-	Requester address line 1
		requester-add2	text	-	-	Requester address line 2
		requester-city	varchar	60	-	Requester city
		requester-state	varchar	60	Not null	Requester state
		requester-zip	integer	-	-	Requester zip
		requester-email	varchar	60	-	Requester email
		requester-mobile	bigint	-	-	Requester mobile number
		assign-tech	varchar	60	Not null	Assign technician name
		request-desc	text	-	-	Request Description
		assign-date	date	20	Not null	Assigned date

Chapter 3
Functional Modeling:

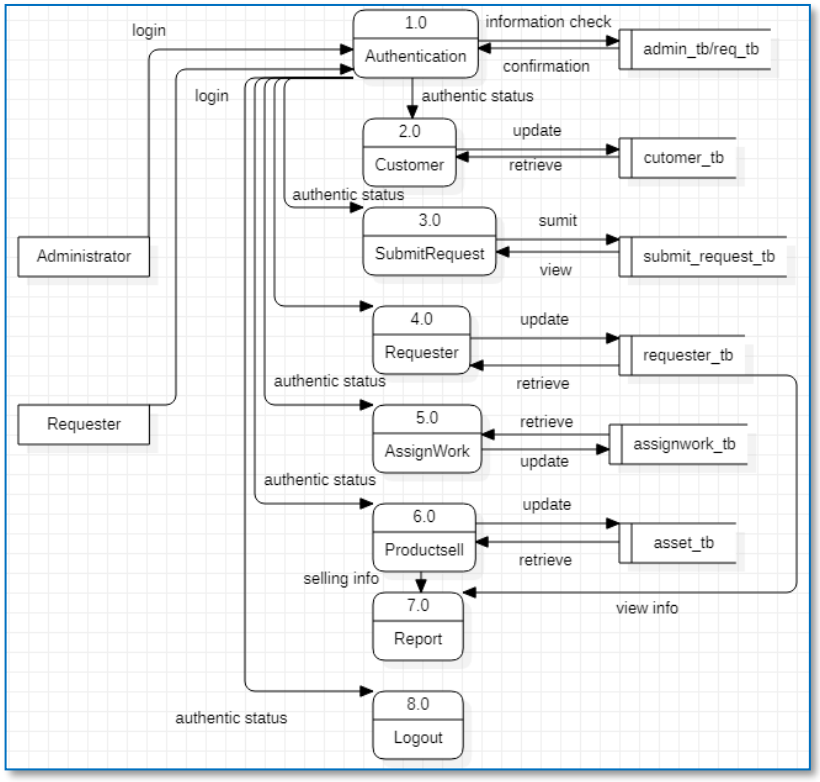
DFD Level 0:

It shows flow of data of application. It's a basic overview of the whole system or process being analyzed or modeled.



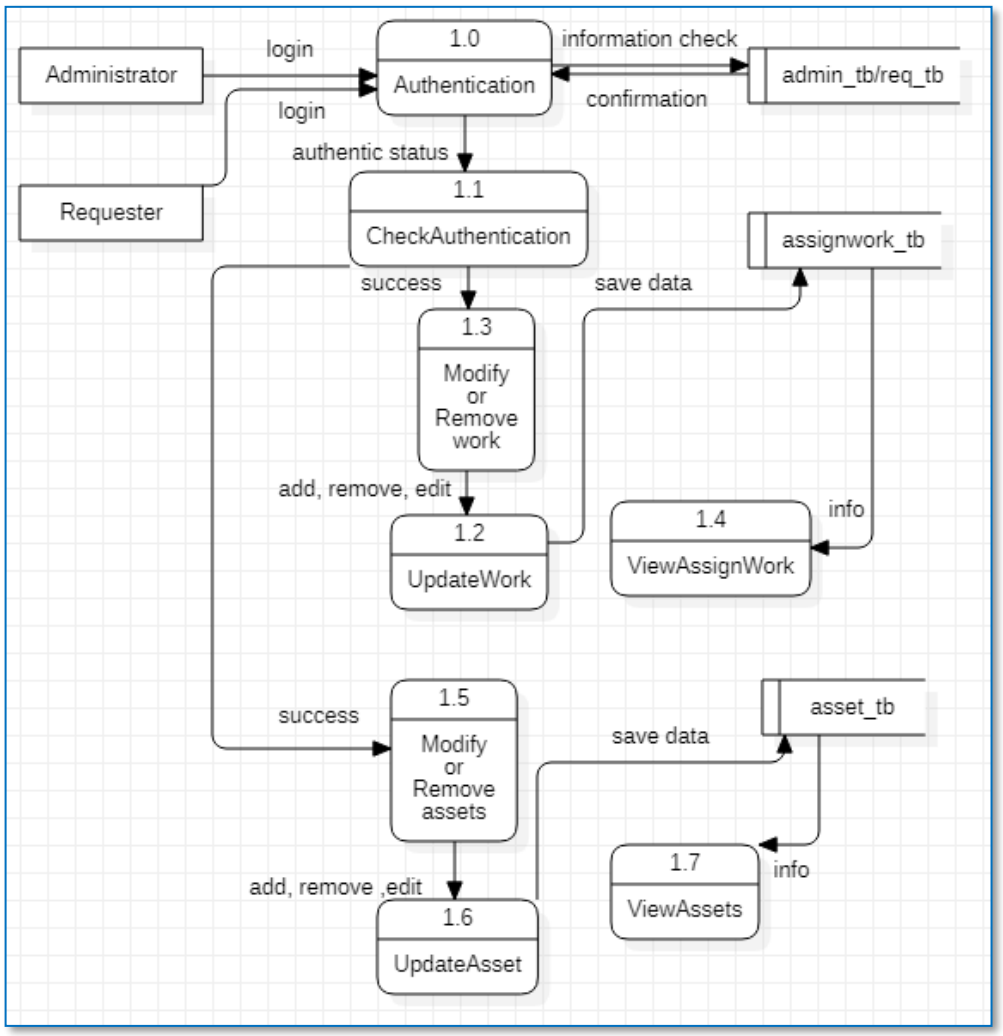
DFD Level 1:

It provides more detailed breakout of pieces of the 0 Level Diagram. It describes the main functions carried out by the system.



DFD Level 2:

It goes on step deeper into parts of Level 1. It requires more text to reach the necessary level of detail about the system's functioning.

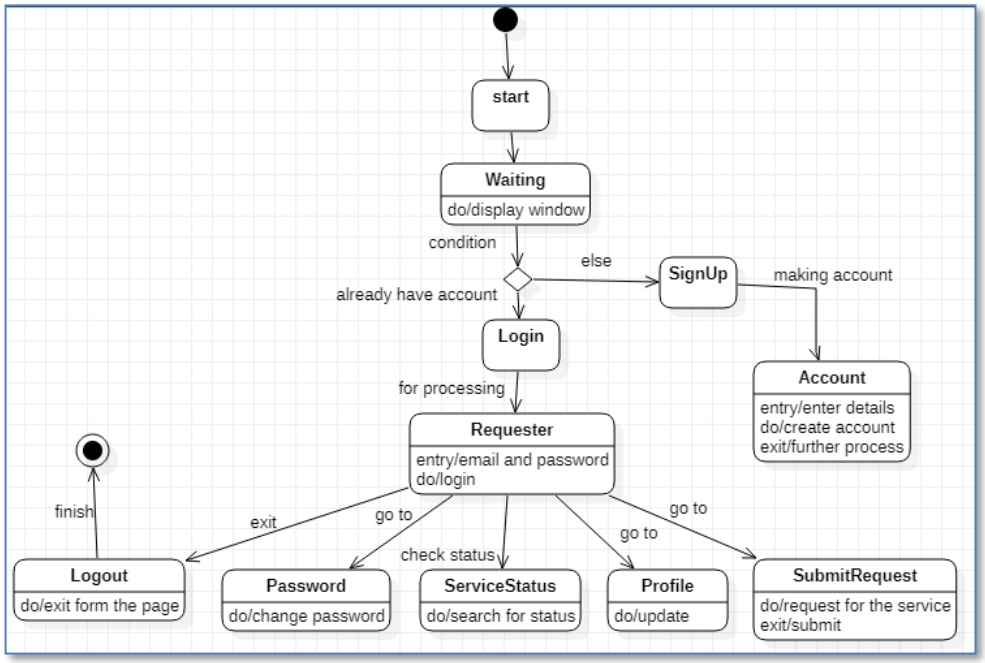


Chapter 4

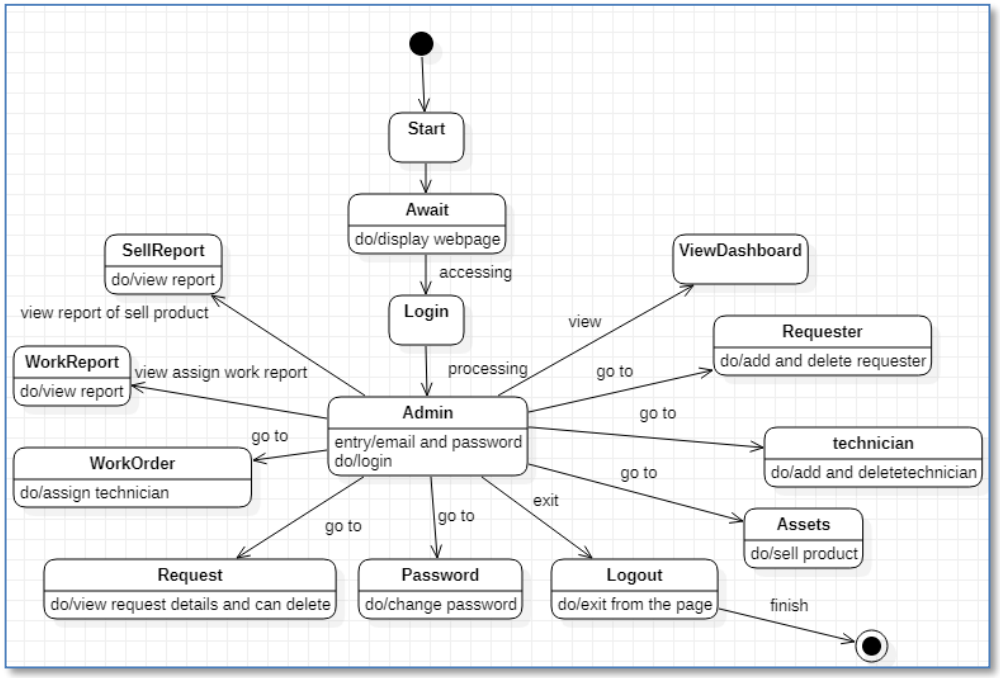
Behavioral Modeling:

State Transition Diagram:

User:



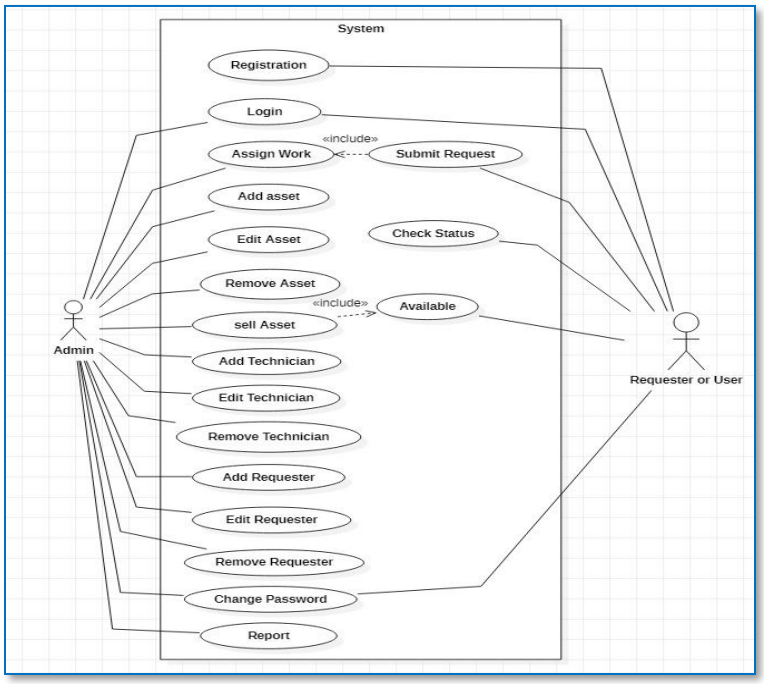
Admin:



Chapter 5

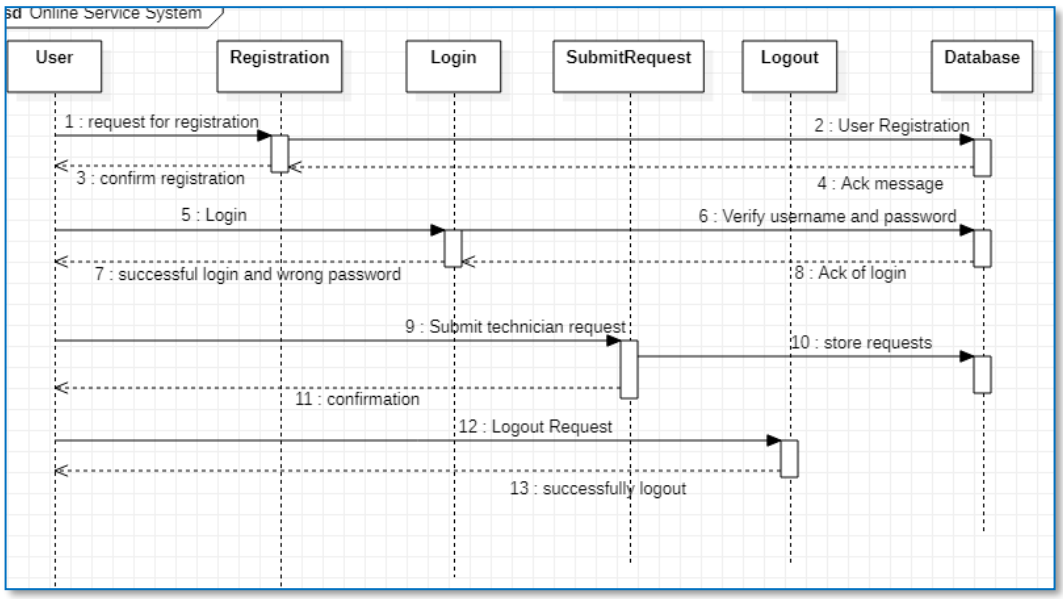
Interaction Modeling:

Use Case Diagram:



Sequence Diagram:

Customer:



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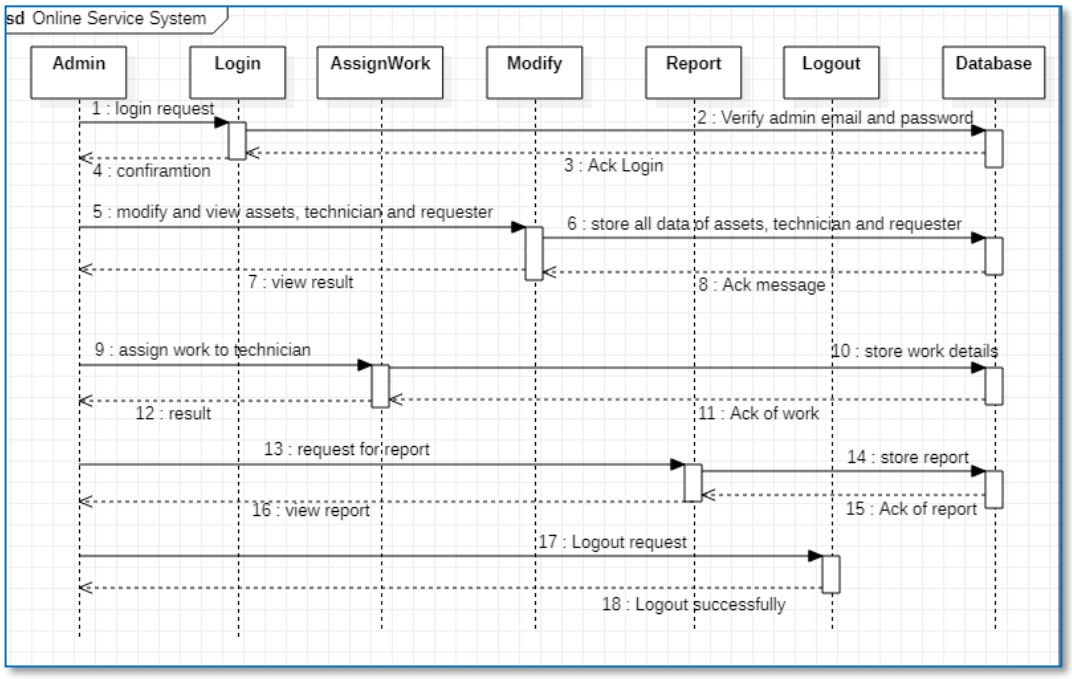

Chapter 6

Deployment View:

Component Deployment Diagram: