Discountify - A Student Facilitation Portal

Final Year Project

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A project submitted in partial fulfillment of the degree of

BS in Computer Science



Submitted to

Dr.Mehdi Hassan

Department of Computer Science

Faculty of Computing & Artificial Intelligence (FCAI)

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| --- | --- | --- | --- | --- | --- |
| Type (Nature of project) | | | [✔] Development [ ] R&D | | |
| Area of specialization | | | [✔] WebApp [ ] Mobile App  [ ] AI based [ ] Embedded System | | |
| FYP ID | | | F-21-43 | | |
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\*The candidates confirm that the work submitted is their own and appropriate credit has been given where reference has been made to work of others

# Plagiarism Certificate

This is to certify that, I \_\_\_\_\_\_\_\_ S/D of \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_, group leader of FYP under registration no \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_at Computer Sciences Department, Air University. I declare that my FYP report is checked by my supervisor.

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**Discountify - A Student Facilitation Portal**

**Change Record**

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| **Author(s)** | **Version** | **Date** | **Notes** | **Supervisor’s Signature** |
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**APPROVAL**

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| **PROJECT SUPERVISOR** | | |
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| **PROJECT MANAGER** | | | |
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| **CHAIR DEPARTMENT** | |
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# Dedication

*This work is dedicated to my . . . . . .*

# Acknowledgements

I am really thankful to my supervisor/university/friend who has . . . . . . . . . .

# Executive Summary [16pt, Times new roman, bold]

*[An executive summary summarizes a longer report or proposal or a group of related reports in such a way that readers can rapidly become acquainted with a large body of material without having to read it all. This section summarizes the overall document, and should include the important highlights from the document. It should be concise. It is NOT an introduction, index or table of contents, it is a summary. The Executive Summary should not make any reference to other parts of the document. You have to write one page to let reader understand an overview of the project.]*

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# List of Abbreviations

1.1 UML Unified Model Notation

1.2 SRE Software Requirement Engineering

2.1 SDR Software Defined Radios

# 

# Chapter 1

# Introduction & Background

**Chapter 1: Introduction [20pt, Not Bold]**

[Paragraph Text 12 pt, Times New Roman, 1.5 Line Spacing, Justified]

[*Between 4 to 8 lines describe what is this chapter all about*]

This chapter introduces the Student Facilitation Portal, a digital platform designed to support students in managing financial and academic challenges. It highlights key features such as exclusive deals and discounts on various services, CV creation tools, course browsing options, and a space for student interaction and study assistance. The chapter emphasizes the project's significance in bridging gaps in existing solutions, offering a structured and user-friendly approach. Additionally, it sets the research context by discussing common student difficulties and how this platform aims to address them effectively.

## Background [16pt, Bold, Times new Roman]

[Paragraph Text 12 pt, Times New Roman, 1.5 Line Spacing, Justified]

Education plays a crucial role in shaping an individual's future, yet students often encounter significant financial and academic challenges throughout their academic journey. The rising costs of tuition fees, study materials, transportation, and daily expenses create financial burdens that can negatively impact students’ focus and overall well-being.

Beyond financial struggles, students frequently lack access to essential academic resources, such as study materials, notes, and guidance, which can hinder their academic performance. Additionally, limited exposure to additional learning opportunities, such as instructor-led courses, restricts students from gaining valuable knowledge beyond their curriculum. The absence of a structured platform for peer interaction further makes it difficult for students to seek study assistance and collaborate effectively.

To address these challenges, a comprehensive digital platform is needed to support students in multiple aspects of their academic life. This project aims to bridge the gap by providing students with exclusive deals and discounts on various services and products, CV creation tools, course browsing options, and a dedicated space for student interaction and study guidance. By integrating these features into a single platform, the Student Facilitation Portal will serve as a practical solution to enhance students' academic experiences and financial stability.

## Motivations and Challenges

[Paragraph Text 12 pt, Times New Roman, 1.5 Line Spacing, Justified]

The motivation for this project arises from the financial and academic difficulties students commonly face. Rising tuition fees, study materials, and daily expenses create financial burdens that affect their well-being and focus on education. While some platforms offer academic resources, discounts (not specifically for students), or networking opportunities separately, there is no single system that integrates these essential services. This project aims to bridge that gap by providing students with exclusive deals and discounts on various services and products, academic support, and a space for peer interaction. By offering a structured and user-friendly solution, the platform will contribute to improving students' financial stability and learning experiences, making education more accessible and manageable.

Developing such a platform presents several challenges, including securing vendor participation for student discounts and ensuring a steady supply of academic resources. Encouraging active student engagement for study guidance and collaboration also requires an effective and well-structured system. Additionally, integrating multiple features while maintaining a user-friendly interface is a complex technical challenge. Limited time and resources further add to the difficulty of refining and expanding the platform. However, these challenges can be addressed through strategic partnerships, iterative development, and a user-centered approach to ensure the platform remains practical, efficient, and beneficial for students.

## Goals and Objectives

[Paragraph Text 12 pt, Times New Roman, 1.5 Line Spacing, Justified]

The primary goal of this project is to develop a comprehensive student facilitation portal that addresses financial and academic challenges by integrating essential services into a single, user-friendly platform. The system aims to provide students with financial relief, academic support, and opportunities for peer interaction, ultimately enhancing their overall educational experience.

To achieve this goal, the following objectives have been identified:

* **BO-1:** Provide a wide range of exclusive deals and discounts on various services and products, including eateries, accommodations, healthcare, and fashion, to help students manage their financial burdens.
* **BO-2:** Develop a user-friendly interface that ensures seamless interaction between students and the platform.
* **BO-3:** Offer real-time updates and notifications about new discounts and brand partnerships to keep students informed.
* **BO-4:** Streamline the CV creation process, empowering students to present themselves effectively to potential employers.
* **BO-5:** Enable students to browse and subscribe to various courses to enhance their academic and skill development.
* **BO-6:** Provide a dedicated space for students to interact, exchange study materials, and seek academic guidance from peers.

## Literature Review/Existing Solutions

[Paragraph Text 12 pt, Times New Roman, 1.5 Line Spacing, Justified]

Several platforms provide student discounts and facilitation services, but they have various limitations that reduce their effectiveness, particularly for students in Pakistan. This section reviews existing solutions and highlights the gaps that the proposed project aims to address.

|  |  |  |
| --- | --- | --- |
| **Application Name** | **Weaknesses** | **Proposed Project Solution** |
| Student Beans / UNiDAYS | Unavailable in Pakistan. | Our platform will be available for students in Pakistan, offering localized student support. |
| Lacks CV creation tools. | It will include a CV creation tool, helping students present themselves effectively to potential employers. |
| Does not provide a platform for student interaction and academic support. | A student community feature will be integrated, allowing students to exchange study materials and seek academic guidance. |
| Lacks an instructor-led course module for skill enhancement. | The platform will provide access to instructor-led courses, enabling students to enhance their skills through structured learning opportunities. |

## Gap Analysis

[Paragraph Text 12 pt, Times New Roman, 1.5 Line Spacing, Justified]

While existing platforms such as Student Beans and UNiDAYS provide student discounts, they lack features that comprehensively support students' financial and academic needs. These platforms do not cater to students in Pakistan, leaving a gap in localized solutions. Additionally, they focus solely on discount offerings without addressing essential aspects such as career development, academic collaboration, and skill enhancement. The absence of a centralized system that integrates these elements limits students' ability to manage their educational and financial challenges effectively.

This project aims to bridge these gaps by introducing a Student Facilitation Portal tailored to the specific needs of students in Pakistan. Unlike existing solutions, it will provide a structured platform that not only offers exclusive deals and discounts but also enables students to create professional CVs, engage in academic discussions, and access instructor-led courses for skill development. By addressing these overlooked areas, the project introduces an innovative, all-in-one solution that enhances students' financial stability and academic growth.

## Proposed Solution

[Paragraph Text 12 pt, Times New Roman, 1.5 Line Spacing, Justified]

To address the financial and academic challenges faced by students in Pakistan, the proposed solution is a comprehensive student facilitation portal that integrates essential services into a single, user-friendly platform. This system aims to provide students with financial relief through exclusive deals and discounts on a variety of services, including eateries, accommodations, healthcare, and fashion. A built-in CV creation tool will enable students to develop professional resumes, increasing their chances of securing employment. Additionally, the platform will foster student collaboration by offering a dedicated space where students can share notes, seek academic guidance, and interact with peers to enhance their learning experience.

The portal will also support skill development by introducing an instructor module, allowing educators to create and sell courses designed to meet students’ needs. This will give students access to structured learning materials and relevant educational content. Furthermore, the system will provide real-time updates and notifications, keeping students informed about new discounts, academic resources, and career opportunities. By integrating these features into a single platform, the student facilitation portal will bridge the gaps found in existing solutions, offering a comprehensive approach to supporting students in managing their educational and financial challenges effectively.

## Project Plan

[Paragraph Text 12 pt, Times New Roman, 1.5 Line Spacing, Justified]

## Work Breakdown Structure

[Paragraph Text 12 pt, Times New Roman, 1.5 Line Spacing, Justified]

## Roles & Responsibility Matrix

[Paragraph Text 12 pt, Times New Roman, 1.5 Line Spacing, Justified]

## Gantt Chart

[Paragraph Text 12 pt, Times New Roman, 1.5 Line Spacing, Justified]

## Report Outline

[Paragraph Text 12 pt, Times New Roman, 1.5 Line Spacing, Justified]

# Chapter 2

# Software Requirement Specifications

**Chapter 2:** Software Requirement Specifications

## Introduction

## Purpose [14pt, Times new Roman, Bold]

<Identify the product whose software requirements are specified in this document, including the revision or release number. Describe the scope of the product that is covered by this SRS, particularly if this SRS describes only part of the system or a single subsystem.>

This Software Requirements Specification (SRS) document outlines the functional and non-functional requirements for the Student Facilitation Portal, a web-based platform designed to assist students in managing their financial and academic challenges. The system will offer exclusive deals and discounts across various sectors, a CV creation tool, and a student collaboration hub where users can share notes and seek academic guidance. Additionally, it will feature an instructor module, allowing educators to create and offer courses, enhancing students' learning opportunities.

The scope of this SRS covers the entire system, detailing both student and instructor functionalities. It defines the features, constraints, and dependencies of the proposed system to ensure a structured development process. This document serves as a guideline for developers, designers, and stakeholders, providing a clear roadmap for implementing the system efficiently.

## 

## Document Conventions

<Describe any standards or typographical conventions that were followed when writing this SRS, such as fonts or highlighting that have special significance. For example, state whether priorities for higher-level requirements are assumed to be inherited by detailed requirements, or whether every requirement statement is to have its own priority.>

## Intended Audience and Reading Suggestions

<Describe the different types of reader that the document is intended for, such as developers, project managers, marketing staff, users, testers, and documentation writers. Describe what the rest of this SRS contains and how it is organized. Suggest a sequence for reading the document, beginning with the overview sections and proceeding through the sections that are most pertinent to each reader type.>

## Product Scope

<Provide a short description of the software being specified and its purpose, including relevant benefits, objectives, and goals. Relate the software to corporate goals or business strategies. If a separate vision and scope document is available, refer to it rather than duplicating its contents here.>

The Student Facilitation Portal is a web-based application designed to assist students in managing their financial, academic, and professional needs. By integrating multiple essential services, the platform provides students with access to exclusive deals and discounts across various sectors, including eateries, accommodations, healthcare, and fashion. Additionally, it offers a CV creation tool to help students build professional resumes and a collaborative space where they can share notes and seek academic support. The portal also includes an instructor module, enabling educators to create and sell courses, allowing students to expand their knowledge beyond traditional academic settings.

The primary objective of the platform is to simplify students' financial management through cost-saving opportunities while also enhancing their career growth by equipping them with professional tools. The system promotes a cooperative academic environment, where students can exchange knowledge and assist each other in their studies. By offering a comprehensive and user-friendly solution, the platform ensures that students can efficiently manage their educational and financial challenges, ultimately contributing to a more productive and stress-free academic journey.

## Overall Description

## Product Perspective

<Describe the context and origin of the product being specified in this SRS. For example, state whether this product is a follow-on member of a product family, a replacement for certain existing systems, or a new, self-contained product. If the SRS defines a component of a larger system, relate the requirements of the larger system to the functionality of this software and identify interfaces between the two. A simple diagram that shows the major components of the overall system, subsystem interconnections, and external interfaces can be helpful.>

The Student Facilitation Portal is a new, self-contained web-based platform designed to address the financial and academic challenges faced by students. Unlike existing systems that offer isolated services such as student discounts or academic resources, this platform integrates multiple essential student-focused services into a single, seamless solution. It does not replace any existing system but introduces a unified approach to providing financial relief, learning resources, and academic collaboration opportunities.

The platform was conceptualized to fill gaps in existing solutions, such as student discount platforms that lack academic collaboration features and learning opportunities. It will offer exclusive student discounts across various industries, enable students to create professional CVs, and facilitate peer-to-peer academic support through shared notes and discussions. Additionally, an instructor module allows educators to create and sell courses, providing students with structured learning content.

The system will interact with external services such as authentication APIs (e.g., Google OAuth) for secure login, payment gateways for course enrollments, and vendor partnerships to ensure a steady stream of student discounts. By consolidating these functionalities, the platform serves as a one-stop solution tailored to students' needs, enhancing their academic journey and financial well-being.

## User Classes and Characteristics

<Identify the various user classes that you anticipate will use this product. User classes may be differentiated based on frequency of use, subset of product functions used, technical expertise, security or privilege levels, educational level, or experience. Describe the pertinent characteristics of each user class. Certain requirements may pertain only to certain user classes. Distinguish the most important user classes for this product from those who are less important to satisfy.>

## Operating Environment

<Describe the environment in which the software will operate, including the hardware platform, operating system and versions, and any other software components or applications with which it must peacefully coexist.>

## Design and Implementation Constraints

<Describe any items or issues that will limit the options available to the developers. These might include: corporate or regulatory policies; hardware limitations (timing requirements, memory requirements); interfaces to other applications; specific technologies, tools, and databases to be used; parallel operations; language requirements; communications protocols; security considerations; design conventions or programming standards (for example, if the customer’s organization will be responsible for maintaining the delivered software).>

## Assumptions and Dependencies

<List any assumed factors (as opposed to known facts) that could affect the requirements stated in the SRS. These could include third-party or commercial components that you plan to use, issues around the development or operating environment, or constraints. The project could be affected if these assumptions are incorrect, are not shared, or change. Also identify any dependencies the project has on external factors, such as software components that you intend to reuse from another project, unless they are already documented elsewhere (for example, in the vision and scope document or the project plan).>

## External Interface Requirements

## 

## User Interfaces

<Describe the logical characteristics of each interface between the software product and the users. This may include sample screen images, any GUI standards or product family style guides that are to be followed, screen layout constraints, standard buttons and functions (e.g., help) that will appear on every screen, keyboard shortcuts, error message display standards, and so on. Define the software components for which a user interface is needed. Details of the user interface design should be documented in a separate user interface specification.>

## 

## Hardware Interfaces

<Describe the logical and physical characteristics of each interface between the software product and the hardware components of the system. This may include the supported device types, the nature of the data and control interactions between the software and the hardware, and communication protocols to be used.>

## Software Interfaces

<Describe the connections between this product and other specific software components (name and version), including databases, operating systems, tools, libraries, and integrated commercial components. Identify the data items or messages coming into the system and going out and describe the purpose of each. Describe the services needed and the nature of communications. Refer to documents that describe detailed application programming interface protocols. Identify data that will be shared across software components. If the data sharing mechanism must be implemented in a specific way (for example, use of a global data area in a multitasking operating system), specify this as an implementation constraint.>

## Communications Interfaces

<Describe the requirements associated with any communications functions required by this product, including e-mail, web browser, network server communications protocols, electronic forms, and so on. Define any pertinent message formatting. Identify any communication standards that will be used, such as FTP or HTTP. Specify any communication security or encryption issues, data transfer rates, and synchronization mechanisms.>

## System Features

<This template illustrates organizing the functional requirements for the product by system features, the major services provided by the product. You may prefer to organize this section by use case, mode of operation, user class, object class, functional hierarchy, or combinations of these, whatever makes the most logical sense for your product.>

## System Feature 1

<Don’t really say “System Feature 1.” State the feature name in just a few words.>

## Description and Priority

<Provide a short description of the feature and indicate whether it is of High, Medium, or Low priority. You could also include specific priority component ratings, such as benefit, penalty, cost, and risk (each rated on a relative scale from a low of 1 to a high of 9).>

## Stimulus/Response Sequences

<List the sequences of user actions and system responses that stimulate the behavior defined for this feature. These will correspond to the dialog elements associated with use cases.>

## Functional Requirements

<Itemize the detailed functional requirements associated with this feature. These are the software capabilities that must be present in order for the user to carry out the services provided by the feature, or to execute the use case. Include how the product should respond to anticipated error conditions or invalid inputs. Requirements should be concise, complete, unambiguous, verifiable, and necessary. Use “TBD” as a placeholder to indicate when necessary information is not yet available.>

<Each requirement should be uniquely identified with a sequence number or a meaningful tag of some kind.>

REQ-SF1-1: <Write your requirement here>

REQ-SF1-2:

REQ-SF1-3:

## System Feature 2

<Don’t really say “System Feature 1.” State the feature name in just a few words.>

## Description and Priority

<Provide a short description of the feature and indicate whether it is of High, Medium, or Low priority. You could also include specific priority component ratings, such as benefit, penalty, cost, and risk (each rated on a relative scale from a low of 1 to a high of 9).>

## Stimulus/Response Sequences

<List the sequences of user actions and system responses that stimulate the behavior defined for this feature. These will correspond to the dialog elements associated with use cases.>

## Functional Requirements

<Itemize the detailed functional requirements associated with this feature. These are the software capabilities that must be present in order for the user to carry out the services provided by the feature, or to execute the use case. Include how the product should respond to anticipated error conditions or invalid inputs. Requirements should be concise, complete, unambiguous, verifiable, and necessary. Use “TBD” as a placeholder to indicate when necessary information is not yet available.>

<Each requirement should be uniquely identified with a sequence number or a meaningful tag of some kind.>

REQ-SF2-1:

REQ-SF2-2:

REQ-SF2-3:

## System Feature 3 (and so on)

This section describes the key features of the Student Facilitation Portal, focusing on functionality, priority, user interactions, and requirements.

**1.4.1. Authentication and Authorization**

**1.4.1.1. Description and Priority**

This feature ensures secure authentication and access control for students and vendors. It includes registration, login, OTP verification, and password management to protect user data and restrict unauthorized access.

**Priority:** High

**1.4.1.2. Stimulus/Response Sequences**

Student initiates registration → System verifies university email → OTP is sent → Student enters OTP → Account is activated.

Vendor submits business details → System verifies the information → OTP is sent → Vendor account is activated.

User enters login credentials → System validates input → Grants access if correct.

**1.4.1.3. Functional Requirements**

REQ-AUTH-1: The system shall allow students to register using a valid university email.

REQ-AUTH-2: The system shall send an OTP to the student's university email for verification.

REQ-AUTH-3: The system shall allow vendors to sign up with business details and verification.

REQ-AUTH-4: Users shall be able to securely log in and log out.

REQ-AUTH-5: Password reset and recovery options shall be provided via email.

**1.4.2. Student Profile**

**1.4.2.1. Description and Priority**

This module enables students to create, update, and manage their profiles with personal information, skills, interests, and CV uploads for job matching.

**Priority:** High

**1.4.2.2. Stimulus/Response Sequences**

Student enters profile details → System saves data → Profile is marked complete.

Student uploads CV → System validates format → CV is attached to profile.

**1.4.2.3. Functional Requirements**

REQ-SP-1: The system shall allow students to enter personal details, including skills and interests.

REQ-SP-2: Students shall be able to update their profiles at any time.

REQ-SP-3: The system shall provide an option to upload and store CVs.

**1.4.3. Vendor Registration and Business Details**

**1.4.3.1. Description and Priority**

Vendors can register on the platform to offer deals and services. They must provide business details, location, and verification information.

**Priority:** High

**1.4.3.2. Stimulus/Response Sequences**

Vendor submits registration form → System verifies details → Business is approved.

**1.4.3.3. Functional Requirements**

REQ-VR-1: The system shall allow vendors to register with business details.

REQ-VR-2: Business verification shall be required before approval.

REQ-VR-3: Vendors shall be able to update their business information.

**1.4.4. Deals and Discounts**

**1.4.4.1. Description and Priority**

Students can view available vendor discounts and deals in various categories like food, accommodations, and fashion.

**Priority:** Medium

**1.4.4.2. Stimulus/Response Sequences**

Student selects vendor category → Available discounts are displayed.

Student chooses a vendor → Discount code is generated.

**1.4.4.3. Functional Requirements**

REQ-DD-1: The system shall display registered vendors and their discount offers.

REQ-DD-2: The system shall generate discount codes upon student selection.

**1.4.5. CV Creation**

**1.4.5.1. Description and Priority**

Students can create a professional CV using customizable templates.

**Priority:** Medium

**1.4.5.2. Stimulus/Response Sequences**

Student selects template → Enters details → Generates CV.

**1.4.5.3. Functional Requirements**

REQ-CV-1: The system shall provide multiple CV templates.

REQ-CV-2: Students shall be able to modify sections, fonts, and layout.

**1.4.6. Instructor Module**

**1.4.6.1. Description and Priority**

Instructors can create courses, upload content, and track student progress.

**Priority:** Medium

**1.4.6.2. Stimulus/Response Sequences**

Instructor uploads course materials → Students enroll and view content.

**1.4.6.3. Functional Requirements**

REQ-INS-1: Instructors shall be able to create courses and upload content.

REQ-INS-2: Students shall be able to browse and enroll in courses.

**1.4.7. Student Community Interaction**

**1.4.7.1. Description and Priority**

A discussion forum for students to post questions, share notes, and rate answers.

**Priority:** Medium

**1.4.7.2. Stimulus/Response Sequences**

Student posts a question → Others respond → Answers are rated.

**1.4.7.3. Functional Requirements**

REQ-SCI-1: Students shall be able to post questions and receive responses.

REQ-SCI-2: Users shall be able to rate the quality of responses.

**1.4.8. Admin Panel**

**1.4.8.1. Description and Priority**

Admin users can manage student/vendor accounts, approve offers, and configure settings.

**Priority:** High

**1.4.8.2. Functional Requirements**

REQ-ADM-1: Admin shall have access to approve/reject vendor registrations.

REQ-ADM-2: Admin shall manage student accounts and platform settings.

**1.4.9. User Feedback and Review**

**1.4.9.1. Description and Priority**

A system for students and vendors to submit feedback and report issues.

**Priority:** Medium

**1.4.9.2. Functional Requirements**

REQ-FDBK-1: The system shall allow users to submit reviews and ratings.

REQ-FDBK-2: Admin shall review and act on reported issues.

## Nonfunctional Requirements

## Performance Requirements

<If there are performance requirements for the product under various circumstances, state them here and explain their rationale, to help the developers understand the intent and make suitable design choices. Specify the timing relationships for real time systems. Make such requirements as specific as possible. You may need to state performance requirements for individual functional requirements or features.>

## Safety Requirements

<Specify those requirements that are concerned with possible loss, damage, or harm that could result from the use of the product. Define any safeguards or actions that must be taken, as well as actions that must be prevented. Refer to any external policies or regulations that state safety issues that affect the product’s design or use. Define any safety certifications that must be satisfied.>

## Security Requirements

<Specify any requirements regarding security or privacy issues surrounding use of the product or protection of the data used or created by the product. Define any user identity authentication requirements. Refer to any external policies or regulations containing security issues that affect the product. Define any security or privacy certifications that must be satisfied.>

## Usability Requirements

## Reliability Requirements

## Maintainability/Supportability Requirements

## Portability Requirements

## Efficiency Requirements

## Domain Requirements

<Define any other requirements not covered elsewhere in the SRS. This might include database requirements, internationalization requirements, legal requirements, reuse objectives for the project, and so on. Add any new sections that are pertinent to the project.>

# 

# Chapter 3

# Use Case Analysis

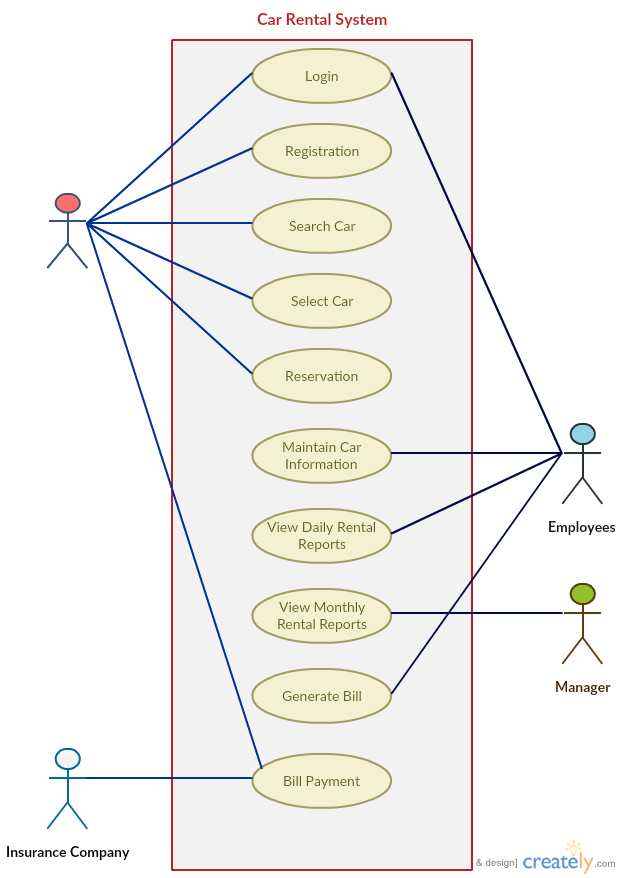
**Chapter 3:** Use Case Analysis

[Paragraph Text 12 pt, Times New Roman, 1.5 Line Spacing, Justified]

[*Between 4 to 8 lines describe what is this chapter all about*]

## Use Case Model

[Paragraph Text 12 pt, Times New Roman, 1.5 Line Spacing, Justified]



**Figure 1: Use Case for Insurance Company**

## Use Cases Description

[Paragraph Text 12 pt, Times New Roman, 1.5 Line Spacing, Justified]

* + 1. **User Login Function**

|  |  |
| --- | --- |
| **Title** | Allow user to sign in |
| **Requirement** | User must be registered through admin |
| **Rational** | Login to the system |
| **Restriction or Risk** | Wrong or correct login sent to database |
| **Dependency** | Pc, Internet connection |
| **Priority** | Safety, timing |

**Table 1: User Login Function**

**Use case 1**

|  |
| --- |
| **Login** |
| **Actor** |
| * Regular User |
| **Preconditions** |
| * Must be register through Admin |
| **Basic flow** |
| * User wants to sign in |
| **Alternate flows** |
| * User don’t want to view result |
| **Post Condition** |
| * User must Sign Out |

**Table 2: User Login Function: Use Case 1**

Similarly, students will create all the use cases along with diagrams and descriptions.

# Chapter 4

# System Design

**Chapter 4:** System Design

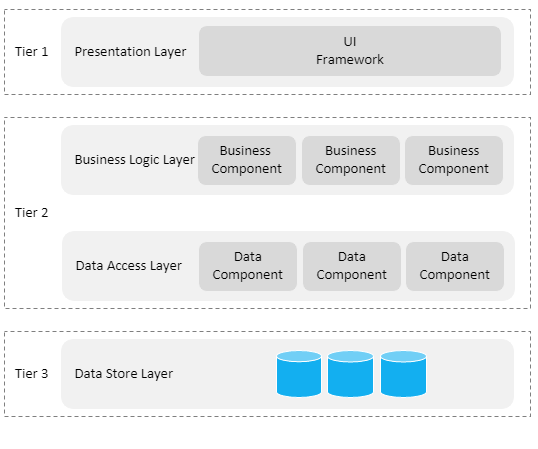
[Paragraph Text 12 pt, Times New Roman, 1.5 Line Spacing, Justified]

[*Between 4 to 8 lines describe what is this chapter all about*]

## Architecture Diagram

[Paragraph Text 12 pt, Times New Roman, 1.5 Line Spacing, Justified]

<Use layered Architecture diagram>

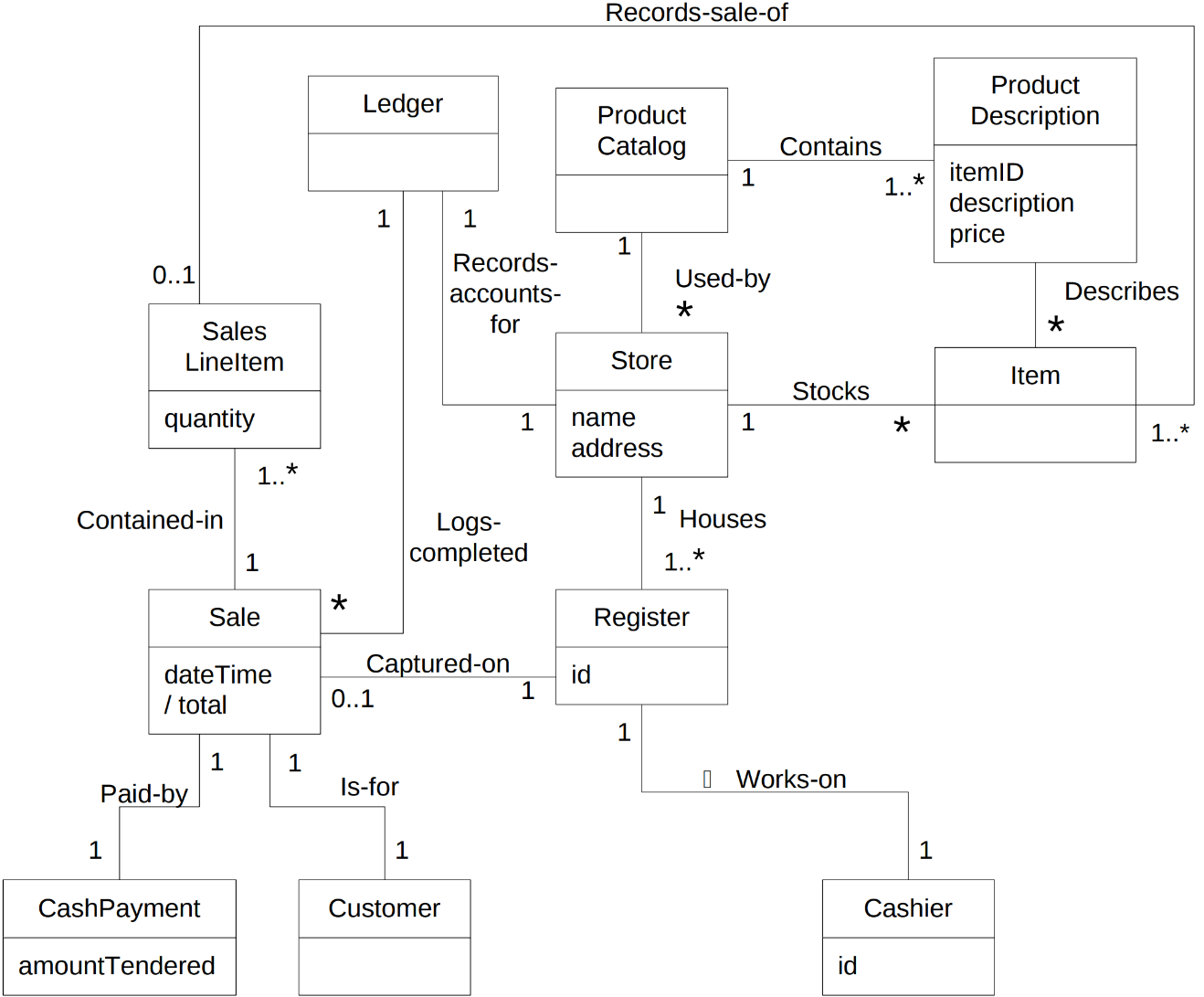


**Figure 2: Architecture Diagram**

## Domain Model

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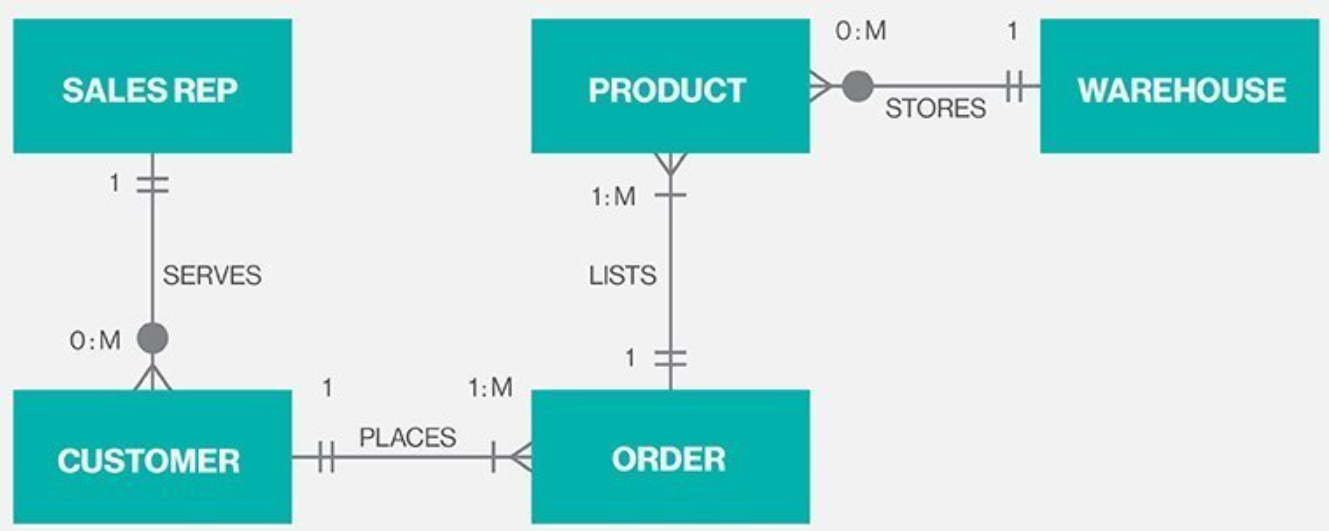
<The Domain Model is your organized and structured knowledge of the problem. The Domain Model should represent the vocabulary and key concepts of the problem domain and it should identify the relationships among all of the entities within the scope of the domain.>



**Figure 3: Doman Model Diagram**

## Entity Relationship Diagram with data dictionary

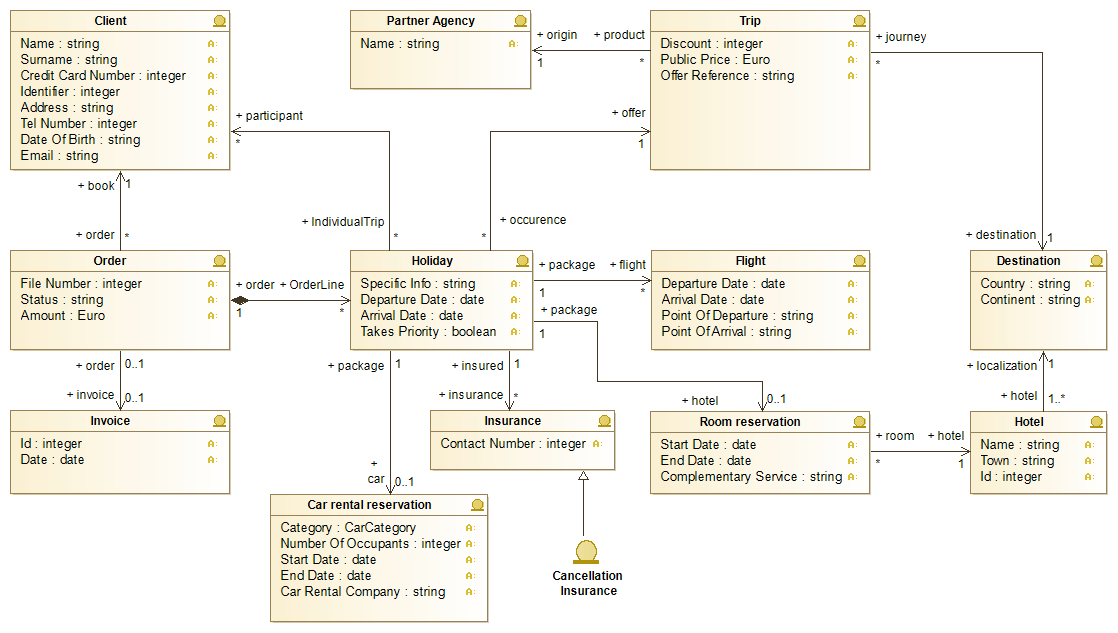
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**Figure 4: ER-Diagram**

## Class Diagram

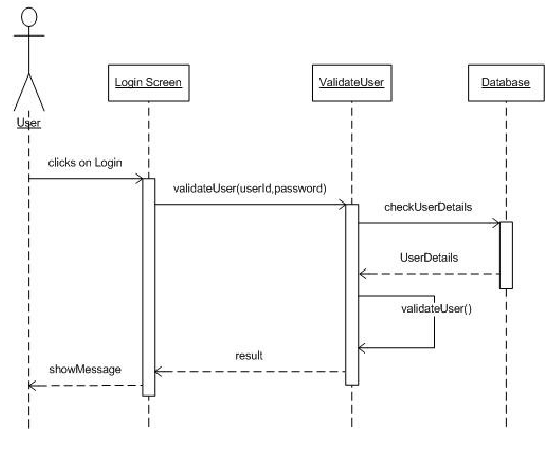
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**Figure 5: Class Diagram**

## Sequence / Collaboration Diagram

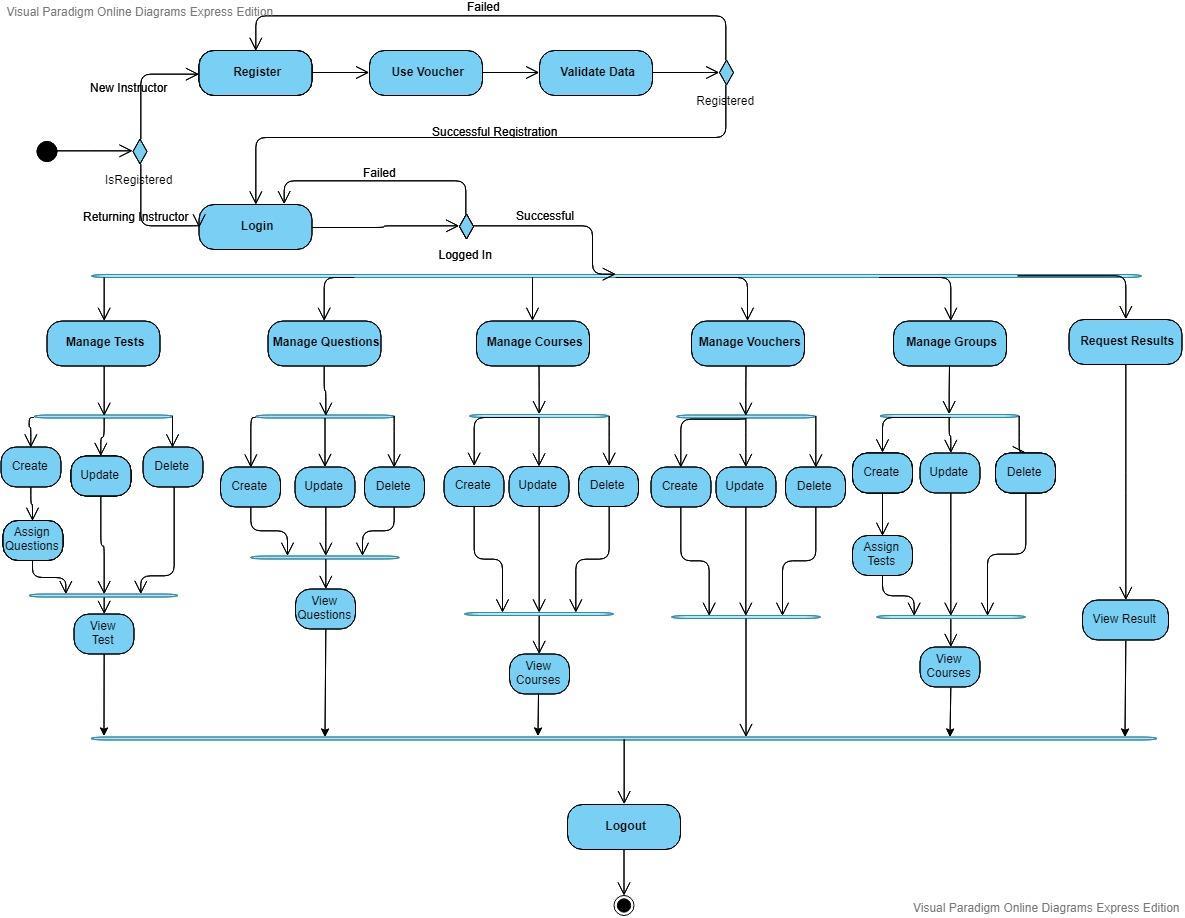
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**Figure 6: Sequence Diagram**

## Activity Diagram

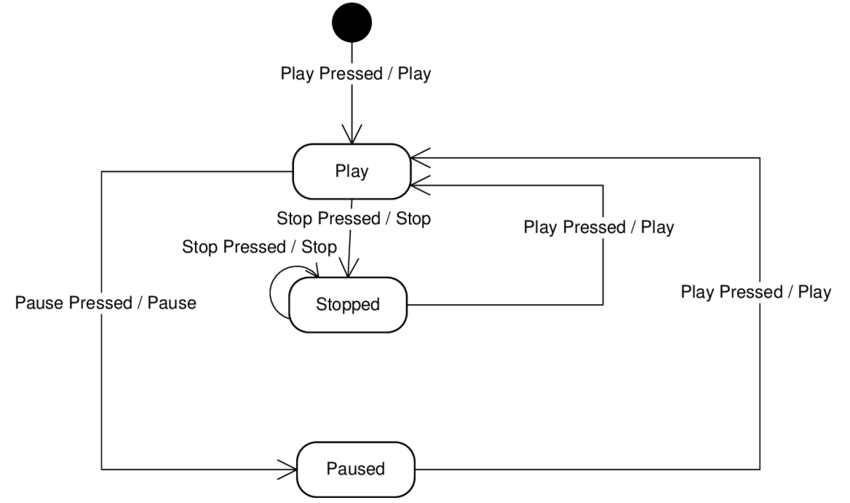
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**Figure 7: Activity Diagram**

## State Transition Diagram

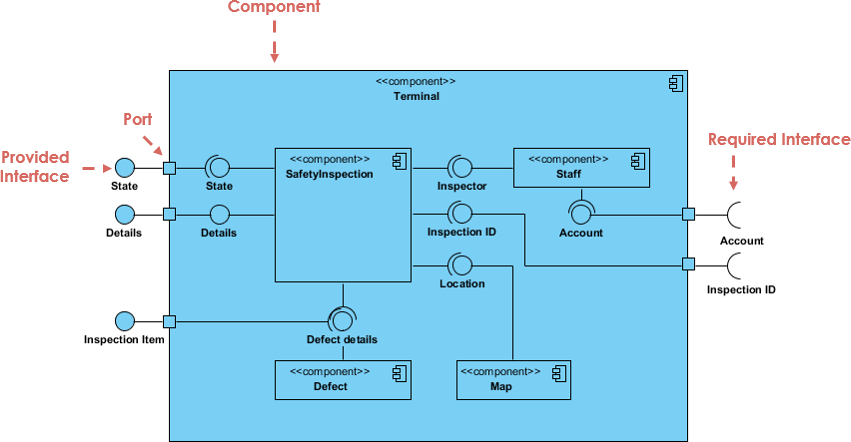
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**Figure 8:State transition diagram**

## Component Diagram

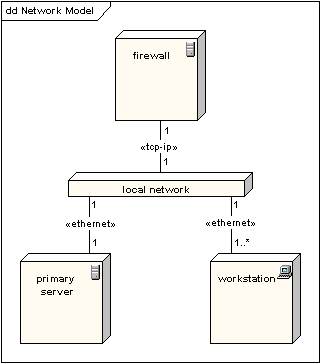
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**Figure 9: Component Diagram**

## Deployment Diagram

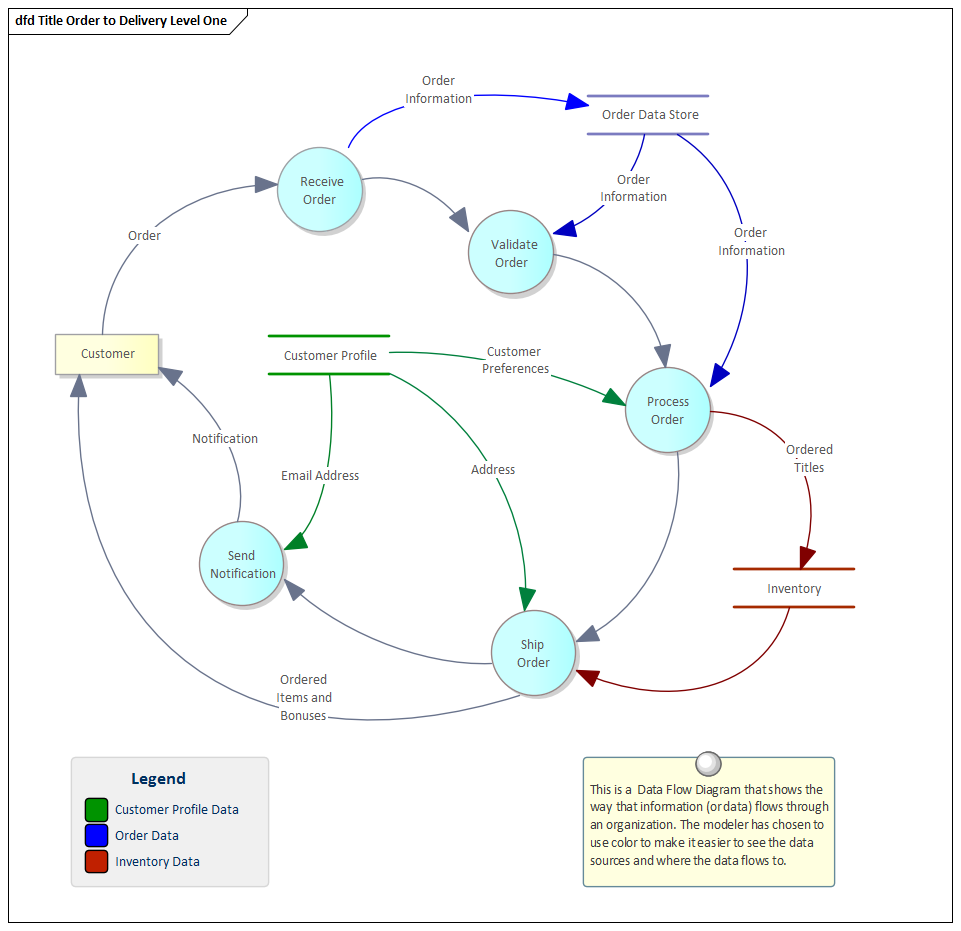
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**Figure 10: Deployment Diagram**

## Data Flow diagram [*only if structured approach is used - Level 0 and 1*]

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# Chapter 5

# Implementation

**Chapter 5:** Implementation

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[*Between 4 to 8 lines describe what is this chapter all about*]

## Important Flow Control/Pseudo codes

[Paragraph Text 12 pt, Times New Roman, 1.5 Line Spacing, Justified]

## Components, Libraries, Web Services and stubs

[Paragraph Text 12 pt, Times New Roman, 1.5 Line Spacing, Justified]

## Deployment Environment

[Paragraph Text 12 pt, Times New Roman, 1.5 Line Spacing, Justified]

## Tools and Techniques

[Paragraph Text 12 pt, Times New Roman, 1.5 Line Spacing, Justified]

## Best Practices / Coding Standards

[Paragraph Text 12 pt, Times New Roman, 1.5 Line Spacing, Justified]

## Version Control

[Paragraph Text 12 pt, Times New Roman, 1.5 Line Spacing, Justified]

# Chapter 6

# Business Plan

**Chapter 6:** Business Plan

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[*Between 4 to 8 lines describe what is this chapter all about*]

* 1. **Business Description**

[Paragraph Text 12 pt, Times New Roman, 1.5 Line Spacing, Justified]

## Market Analysis & Strategy

[Paragraph Text 12 pt, Times New Roman, 1.5 Line Spacing, Justified]

## Competitive Analysis

[Paragraph Text 12 pt, Times New Roman, 1.5 Line Spacing, Justified]

## Products/Services Description

[Paragraph Text 12 pt, Times New Roman, 1.5 Line Spacing, Justified]

## SWOT Analysis

[Paragraph Text 12 pt, Times New Roman, 1.5 Line Spacing, Justified]

# Chapter 7

# Testing & Evaluation

**Chapter 7:** Testing and Evaluation

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[*Between 4 to 8 lines describe what is this chapter all about*]

* 1. **Use Case Testing (Test Cases)**

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<Create test case for each use-case you created in use-case section (Example shown below)>

**Test Case - 1**

|  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Test Case ID** | | BU\_001 | **Test Case Description** | | Test the Login Functionality in Banking Application | | | | | |
| **Created By** | | Usman | **Reviewed By** | | Jamil | | **Version** | | 2.1 | |
|  |  |  |  |  |  |  |  |  |  |  |
| **QA Tester’s Log** | | Review comments from Jamil incorporate in version 2.1 | | | |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |  |  |
| **Tester's Name** | | Usman | **Date Tested** | | 1-Jan-2017 | | **Test Case (Pass/Fail/Not Executed)** | | Pass | |
|  |  |  |  |  |  |  |  |  |  |  |
| **S #** | **Prerequisites:** | | |  | **S #** | **Test Data** | | | | |
| 1 | Access to Chrome Browser | | |  | 1 | Userid = mg12345 | | | | |
| 2 |  | | |  | 2 | Pass = df12@434c | | | | |
| 3 |  | | |  | 3 |  | | | | |
|  |  |  |  |  |  |  |  |  |  |  |
| **Test Scenario** | Verify on entering valid user\_id and password, the customer can login | | | | | |  |  |  |  |
|  |  |  |  |  |  |  |  |  |  |  |
| **Step #** | **Step Details** | | **Expected Results** | | **Actual Results** | | | **Pass / Fail / Not executed / Suspended** | | |
|  |
| 1 | Navigate to http://demo.guru99.com | | Site should open | | As Expected | | | Pass | | |  |
| 2 | Enter Userid & Password | | Credential can be entered | | As Expected | | | Pass | | |  |
| 3 | Click Submit | | Customer is logged in | | As Expected | | | Pass | | |  |
| 4 |  | |  | |  | | |  | | |  |

* 1. **Equivalence partitioning**

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<Perform equivalence partitioning testing for all possible use cases and functions which takes some parameters and use values in any kind of operation>

* 1. **Boundary value analysis**

[Paragraph Text 12 pt, Times New Roman, 1.5 Line Spacing, Justified]

<Perform Boundary value testing for all possible use cases and functions which takes some parameters and use values in any kind of operation>

* 1. **Data flow testing**

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Perform data flow testing according to the sequence and dataflow diagram in above design section.

* 1. **Unit testing**

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<Individual testing of all components and functionalities/features of your application/web site/product. For example, if your application has location tracking and location sending two different features so you should do individual testing for both of them the you have to show results/final outcome also mention the testing process along with pass and fail result of test.>

* 1. **Integration testing**

[Paragraph Text 12 pt, Times New Roman, 1.5 Line Spacing, Justified]

<Perform integration testing of all combined features and components of your product. For example if your product have a backend database connected with mobile application web portal then you should check the API level data transfer and between all of them. You also mentioned methods you used for integration testing.>

* 1. **Performance testing**

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* 1. **Regression Testing**

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* 1. **Stress Testing**

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# Chapter 8

# Conclusion & Future Enhancements

**Chapter 8:** Conclusion & Future Enhancements

* 1. **Achievements and Improvements**

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* 1. **Critical Review**

[Paragraph Text 12 pt, Times New Roman, 1.5 Line Spacing, Justified]

* 1. **Lessons Learnt**

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* 1. **Future Enhancements/Recommendations**

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# 

# Appendices

# Appendix A: Information / Promotional Material

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[*Between 4 to 8 lines describe what is this appendix all about*]

* 1. **Broacher (if any)**

* 1. **Flyer (if any)**
  2. **Standee (if any)**
  3. **Banner (if any)**

**Reference and Bibliography**

**Note:** Use Mendeley or Endnote

[1] M. Sher, M. Rehman, “*Title of the Paper*” Conference name/Journal Name, Edition, Volume, Issue, ISBN/ISSN, PP, Publisher/City-Country, Year.

[2] ……