**Case Study Document: Integrate C with file system**

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**1. Introduction**

**1.1 Purpose**

The purpose of this case study is to demonstrate the integration of c with filesystem. The assignment aims to showcase the implementation of essential features using this technology stack.

**1.2 Technologies Used**

- C

**2. Business Scenario**

**2.1 Background**

The assignment is based on a scenario where a company requires a web application to manage user data. The data consists of users' basic information, such as name and email. The application should support storing, retrieving, updating, and deleting user records.

**2.2 Problem Statement**

The company needs an efficient solution to manage user data.

**2.3 Objectives**

The main objectives of this case study are:

1. write a c application to perform the below operations
   1. we should be able to get the user details
   2. user details should be editable
   3. we should be able to delete the user details

**3. System Architecture**

**3.1 High-Level Overview**

The system will follow a typical have the following:

1. Presentation Layer: A menu-based application that will help user to perform the operations

2. Business Logic Layer: Contains application logic and coordinates data access.

3. Data Access Layer: Manages interaction with file system.

**3.3 Data Flow**

The data flow within the system is as follows:

1. User will select an operation

2. Take an input from user.

3.Perform the operation and read/write to a file.

**4. Features**

The web application will offer the following features:

**4.1 User Management**

- Create new user records with name, email

- Retrieve user records by ID or email.

- Update existing user information.

- Delete user records.

**4.2 Data Storage and Retrieval**

- Retrieve user data from file.

**4.3 CRUD Operations**

- Implement Create, Read, Update, and Delete operations using c and filesystem.

- Validate inputs and handle exceptions gracefully.

**5. Implementation Steps – To be filled and submitted by the learner**

**5.1 Creating a c Project**

<<Steps for creating a new c program or any other method.>>

**5.2 Implementing User Management**

<<Step-by-step guide to creating the necessary steps for user management.>>

**5.3 Handling Data Storage and Retrieval**

<<Demonstrate how to store user data in file and retrieve it using c.>>

**5.4 Implementing CRUD Operations**

<<Walk through the implementation of Create, Read, Update, and Delete.>>