# CS 255 System Design Document Template

## UML Diagrams

### UML Use Case Diagram

A Use Case Diagram has been presented to capture the chief functions that will be performed by the system.

**Driver Pass**

**IT Officer**

**Secretary**

**Customer**

**Owner**

### UML Activity Diagrams

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
|  |  | Verification of username |  | **WRONG NAME** |
|  |  |  |  |  |
|  |  | Correct Username |  |  |
|  |  |  |  |  |
|  |  | Ask about the email address |  | Email not Valid |
|  |  | Email is Valid |  |  |
|  |  | Email is sent to the user |  |  |
|  |  |  |  |  |
|  |  |  |  |  |
| User receives email |  |  | User does not receive email |  |
| User has to click the link and reset the password | |  | User gets in touch with the IT officer to reset the password | |
|  |  |  |  |  |
|  |  | Confirmation of password reset is sent to the user |  |  |
|  |  |  |  |

**END**

The activity diagram that has been presented breaks down the function relating to the setting of the password by the users of the system of Driverpass. The users must use a correct user name initially so that they can be then asked about the email address. After it is done, a link will be sent to reset the password. Once the password has been reset, the users will receive a confirmation in their email. In case any technical issues arise and the users are not able to receive the email, then they need to contact the IT officer for further assistance. If they have provided a wrong user name, the process will abruptly come to an end and the users will be required to share the right username and begin the process all over again.

**Start**

|  |  |  |
| --- | --- | --- |
|  | Verification of login details |  |
|  |  |  |
|  |  | Wrong Login |
|  | Correct login |  |
|  |  |  |
|  | User selects the data for download purpose |  |
|  |  |  |
|  | User then verifies the downloaded data |  |
|  |  |  |
|  | User confirms the downloaded data | |
|  |  |  |
|  | File is generated and data is downloaded by the user |  |
|  |  |  |
|  | User receives the confirmation of the downloaded data |  |
|  |  |  |
|  | End |  |

The activity diagram that has been presented focuses on the function in which a user has to select data for download purposes. Initially, he has to select the data, then he has to verify the data prior to the downloading process. In case wrong login details are provided, then the process will abruptly come to an end, and it has to be started from the beginning. Once the desired file has been generated, and the data has been downloaded by the user, he will be receiving the confirmation of the downloaded data.

### UML Sequence Diagram

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| User | |  | UI | |  | Database | |
|  |  |  |  |  |  |  |  |
|  | Ask for username | | |  |  |  |  |
|  |  |  |  |  |  |  |  |
|  | Enter username | |  |  |  |  |  |
|  |  |  |  |  |  |  |  |
|  |  |  |  | Verify username | |  |  |
|  |  |  |  |  |  |  |  |
|  |  |  |  | Username valid | |  |  |
|  | Ask for email | |  |  |  |  |  |
|  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |
|  | Enter email | |  |  |  |  |  |
|  |  |  |  | Verify email | |  |  |
|  |  |  |  |  |  |  |  |
|  |  |  |  | Email valid | |  |  |
|  | Ask user to check email | |  |  |  |  |  |
|  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |
|  | User clicks link | |  |  |  |  |  |
|  |  |  |  |  |  |  |  |
|  | Ask for new password | |  |  |  |  |  |
|  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |
|  | Enter new password | | | |  |  |  |
|  |  |  |  | Verify password | |  |  |
|  |  |  |  |  |  |  |  |
|  |  |  |  | Password valid and updated | |  |  |
|  |  | Password reset |  |  |  |  |  |

The sequence diagram that has been presented encompasses user, UI and Database the ley elements that have been integrated relate to username, email, checking of link and resetting of password. The activities are carried out in a sequential manner so that the users can move form one stage to another while using the new system of Driverpass.

### UML Class Diagram

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
|  |  |  | User |  |  |  |  |
|  |  |  | username: str  Password: str |  |  |  |  |
|  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |
|  | IT Officer |  | Owner |  | Secretary |  | Customer |
|  |  |  |  |  |  |  |  |
|  | reset Password (String): void |  | Download Data (string): void |  | Schedule appointment: Void Update customer info: Void |  | Reset Password (String): Void Schedule appointment: Void Update customer info: Void View training progress: Void View training packages: Void |
|  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |

The Class diagram that has been presented gives an insight into different classes as well as attributes that are needed for the system design. The diverse classes that have been identified include User, IT Officer, Owner, Secretary and Customer. The IT Officer will be responsible for resetting the password of the users in case they face any technical issues. The owner will have the ability to download available data in the system. The Secretary will be able to perform a number of functions such as the scheduling appointment for customers and updating their information in the system. The chief functions relating to the customers include resetting of passwords, scheduling an appointment for driving training, updating customer info, viewing their training progress and viewing the available training packages in the system.

## Technical Requirements

The system of Driverpass has a number of technical requirements. The system will be designed so that it can be used on the web. An ideal option that has been identified is the cloud technology. The mobile technology will be supported so that the owner will enable to download the necessary data using his mobile phone. In addition to this, the infrastructure will require a database which could be a physical center or a cloud-based one. It will play an instrumental role to capture and store relevant information relating to the login details of the users and other necessary information that will influence the smooth functioning of the innovative solution of Driverpass.

In order to make sure that the opportunities for cybercriminals and online hackers are minimized, all the data that will be exchanged in-house or with outside parties will be encrypted. Such a step will be taken to make sure that the vulnerability of the digital solution is minimized and online hackers will not be able to gain unauthorized access to sensitive and confidential information relating to the client or the customers. By integrating a cloud solution into the system, it will be possible to make sure that the data and information is updated on a real-time basis and the accuracy of the data s maintained effectively. A vital feature that can be used is the training calendar. Such a calendar can help in scheduling the appointments of the customers and ensuring that they do not get overlapped in any manner. A key element that will be considered is the provision of role-based access to the system. This security measure will be taken to ensure there is a proper division of responsibilities and roles among the professionals.

It is vital to focus on the required hardware, software, tools, and/or infrastructure elements so that the new system can be effectively supported and the needs of the client can be addressed.