

Model Driven Software Engineering

(COEN 6312)

Project Deliverable 2

Submitted to

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# ABSTRACT

In this project we have built a temperature sensing unit which monitors the temperature and cools the operating unit by controlling speed of the motor using pulse width modulation (PWM).The project runs on a FRDM KL25Z board with the coding in Keil µV5. The application incorporates integration of hardware and software such that we can have a better flexibility with the use of software.

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INTRODUCTION

Fly Air offers an online reservation for its flights between various destinations at an affordable cost. This online reservation system enables the user to search, view and select flights as per requirements.

USE CASE Diagrams

USE CASE Descriptions

User

1. Register

|  |  |
| --- | --- |
| **Use Case Name:** | Register |
| **Use Case ID:** | **UC-1** |
| **Description:** | Registration of a new user to generate a new account in the system database |
| **Actor:** | User, Administrator and System |
| **Pre-conditions:** | User doesn’t have an account. |
| **Post-conditions:** | **Success End condition:**  1.New account created for the user.  2.The database has been updated.  3 .A success message is displayed to the user.  **Failure End condition:**  1. The account not created.  2. An error message is displayed to the user. |
| **Normal flow:** | 1.  The user clicks on the link for registration on the webpage  2.  The system displays the registration page.  3.  The user inputs all of his necessary personal informations.  4.  The system verifies the entered information.  5.  The system updates the database.  6.  The confirmation message for the new account is displayed to the user. |
| **Alternative flow:** | N/A |
| **Exceptions:** | In step4: The user registration form is missing mandatory informations or has incorrect characters or duplicate email ID.  4.1. The system highlights the sections having error.  4.2. The system notifies with an error message that alerts the user about  the error.  4.3. The system prompt the user to fix the wrong informations or to add the missing informations.  In step 5 : The system detects a problem with the database connection  5.1. The system informs the user of the problem with connection  5.2. The user registration fails. |
| **Includes:** | Get Authentication use case. |
| **Priority:** | High |

1. Login

3. Search Flights

|  |  |
| --- | --- |
| **Use Case Name:** | Search Flights |
| **Use Case ID:** | **UC-3** |
| **Description:** | Searchs the available flights as entered by the User |
| **Actor:** | User and Administrator |
| **Preconditions:** | User has logged into the system |
| **Post conditions:** | **Success end condition:**  1. The requested Flight list information has been retrieved.  **Failure end condition:**  1.The requested flight list information could not be retrieved.  2. An error message is displayed to the User |
| **Normal flow:** | 1.  The user navigates to the Search Flights section.  2.  The User enters the Travel information.  3.  The system retrieves all the relevant flight information from the database. |
| **Alternative flow:** | The User can search the flights without Login |
| **Exceptions:** | In step 2: 1. The user enters invalid Travel Information  2.  The systems displays the error message to the user.  In step 3: There is no flight available at the requested time. |
| **Includes:** | N/A |
| **Priority:** | Medium |

4. View Flights

|  |  |
| --- | --- |
| **Use Case ID:** | **UC-4** |
| **Use Case Name:** | View Flights |
| **Description:** | This use case describes that the user will view list of available flights |
| **Actor:** | User and Administrator |
| **Pre-conditions:** | 1.  User searches a Flight  2.  Flight exists in the system |
| **Post-conditions:** | **Success End condition:**  1. The flight information has been retrieved and shown to the user.  **Failure End condition:**  1. The flight information could not be retrieved.  2. An error message is displayed to the user. |
| **Normal flow:** | 1. The system displays the list of flights page.  2. The user navigates through the list of flights.  3. The user selects the desired flight. |
| **Alternative flow:** | The user can view of the list of Flights page without login. |
| **Exceptions:** | In step 3: The system detects a problem with retrieving the desired flight information from the database.  3.1 The User must login to select the flight  3.2 The system requests the user to login to proceed with selection of flight. |
| **Includes:** | N/A |
| **Priority:** | Medium |

5 . Select Flights

|  |  |
| --- | --- |
| **Use Case ID:** | **UC-5** |
| **Use Case Name:** | Select Flight |
| **Description:** | The User can select a Flight |
| **Actor:** | User and Administrator |
| **Preconditions:** | 1. User has logged into the system  2. User has viewed the list of flights |
| **Post conditions:** | **Success End condition:**  1. The user has selected the desired flight.  **Failure End condition:**  1. The desired flight could not be selected.  2.  An error message is displayed to the user. |
| **Normal flow:** | 1.  The User navigates through the flight selection section  2.  The system retrieves the flight information from the database and checks for any conflicts.  3.  The system updates the database.  4.  The system displays the confirmed selection. |
| **Alternative flow:** | N/A |
| **Exceptions:** | In step 4 : The system detect a problem retrieving the info from the database.  4.a.1. The system retry (max of 5 times) to retrieve the information from the database  4.a.2. The system informs the user with the problem.  In step 8 : The system detect a conflict prevent the documenting process.  8.a.1. The system informs the Borrower with detected conflict.  In step 9: The system detect a problem with the database connection  9.a.1. The system informs the Borrower with the connection problem  9.a.2. The document is not added to the Borrower record. |
| **Includes:** | Get authentication use case. |
| **Priority:** | High |