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|  | FPT ACADEMY INTERNATIONAL  FPT – APTECH COMPUTER EDUCATION |

Center Name: ACE-HCMC-2-FPT

Address: 590 Cach Mang Thang Tam Street, District 3, Ho Chi Minh City, Viet Nam



Online Help Desk

Design Document

|  |  |  |  |
| --- | --- | --- | --- |
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October, 2018

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This is to certify that

have successfully designed and

developed 

Submitted by:

Date of Issue: \_\_\_\_\_\_\_\_

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REVIEW I

# **Acknowledgments**

We would like to acknowledge all those who have given support and help us make the project a success.

We wish to express our deep gratitude to all teachers who have been devoting their lives to teach us how to stand-alone and walk ahead.

We are grateful to our families as well as our friends who take care and encourage us even though we are successful or failed. They never leave us alone and always look forward to us when we are on any road of the life.

We are much thankful to the entire staff and chairpersons at the Head Office of FPT – Aptech Centre who have been organizing and looking after our studying course.

There are no words to show our appreciation for our teacher, Mr Tran Phuoc Sinh, who worked day by day to teach and guide us to complete this project.

Finally, we would like to offer many thanks to all our schoolfellows for their valuable suggestions.

We would like to thank sincerely!

Group 7 – FPT Aptech.

# **II. Problem Definition**

## 1. Introduction

Perfect Technological Innovation is one of the largest university of technology in the world. Its campus is very huge with many facilities. Therefore, students, staff and people who want to manage and use these facilities have a big difficulty. That leads to the urgent demand to build an application which helps them to feel convenient and comfortable in conducting these material bases.

## 2. Existing Scenario

This project is aimed at developing an Online Help Desk (OHD) for the facilities in the Perfect Technological Innovation’s campus. This is an Intranet based application that can be accessed throughout the campus. This system can be used to automate the workflow of service requests for the various facilities in the campus. This is one integrated system that covers different kinds of facilities like class-rooms, labs, hostels, mess, canteen, gymnasium, computer centre, faculty club etc. Registered users (students, faculty, lab-assistants and others) will be able to log in a request for service for any of the supported facilities. These requests will be sent to the concerned people, who are also valid users of the system, to get them resolved. There are features like email notifications/reminders, addition of a new facility to the system, report generators etc in this system.

## 3. Requirement Specification

### Administrator

Administrator will have managing abilities:

* Manage user accounts (creating new user account, editing user info, blocking user on accessing this application, supporting in restoring password etc).

### Facility Heads (Staffs)

Facility heads will have abilities:

* Login to the system through the first page of the application.
* Manage their information (View/Update their info and change password).
* See the list of the requests created by students.
* Send these requests to assignees who have responsibility to handle them.
* See the list of requests (both open and closed) sent by him/her to assignees over the past.
* Update request.
* Manage facilities (adding new facilities, deleting/block facilities).

### Assignees (Staffs)

Assignees will have abilities:

* Login to the system through the first page of the application.
* Manage their information (View/Update their info and change password).
* View the requests sent from facility heads.
* Change the status of the request (work in progress, close or reject)
* See the list of requests sent to them.
* Get help about Online Help Desk (OHD) System on how to use the different features of the system.

### End-user

Students have abilities:

* Login to the system through the first page of the application.
* Manage their information (Update their info and change password).
* Create a new request by specifying the facility, the severity of the request (there may be several levels of severity defined) and a brief description of the request
* See the status of the requests create by him/her (the status could be one of unassigned/assigned/work in progress/closed or rejected).
* Close a request created by him/her by giving an appropriate reason.
* Get help about Online Help Desk (OHD) System on how to use the different features of the system.

## 4. Hardware / Software Requirements

#### Software

|  |
| --- |
| * Visual Studio .Net / ASP * Sql Server Management Studio 2012 * .Net Framework 3.5+ * Web Browser(Chrome,Edge, Internet Explorer) |

#### Hardware

|  |
| --- |
| * A minimum computer system that will help you access all the tools in the courses is a Pentium 166 or better * 1GB Megabytes of RAM or better * Hardware 5GB or better |

# **Task sheet review 1**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Project Ref. No: 4 | Project Title:  Railway Reservation Manage System | Date of Preparation of Activity Plan | | | |
| No. | Task | Actual Start Date | Actual Days | Team Member Names | Status |
| 01 | Acknowledgment | Oct 24,2018 | 2 | All Members | Completed |
| 02 | Problem Definition | All Members | Completed |
| 03 | Customer Requirement | All Members | Completed |
| 05 | Hardware/Software | All Members | Completed |
| 06 | Task sheet | All Members | Completed |

|  |  |  |
| --- | --- | --- |
|  | Prepare By: Group 7 | Approved By: Faculty |
| Date: Oct 26, 2018 | Team Leader  Nguyen Hoang Tu | Tran Phuoc Sinh |

REVIEW II

# **Architecture & Design of the Project**



## Presentation Tier:

Is the tier in which the users interact with application . Presentation Tier contents Model, View, Controller used to receive a request and response to User.

Technology: ASP.NET MVC4, Razor, HTML, CSS, JavaScript, Ajax, JQUERY, Twitter Bootstrap

## Business Logic Tier:

Is mainly working as the bridge between Data Tier and Presentation Tier. All the Data passes through the Business Tier before passing to the Presentation Tier.

Technology: OOP, ASP.NET

## Data Access Tier:

Is basically the server which stores all the application’s data .Data tier contents Database Tables, Database Views and other means of storing Application Data .

Technology: SQL Server, LINQ, ADO.NET

# Algorithms - Data Flowchart:

## Symbol generates:



## 

## Login process (Admin & users):

Start

Login

Username

Password

Show fail message

Check Username and password

failure

success

Check Admin?

failure

End

Home page

success

Admin page

End

## Log out process:

Start

Logout

Confirm?

yes

Clear Session

no

Homepage

End

## 

## Create new user process (Admin only):

Data

base

Admin page

Login

Create new user account

failure

Input information

save

Check duplicate

success

Generate and encode default password

End

## View list of user account process (Admin only):

User management

View list of users

Start

End

## “Change status of user” process (View specific user information, block, unblock, delete, reset password - Admin only):

View list of users

User management

Start

Search specific user

Reset password

Unblock user

Delete user

Block user

View user details

Validate

fail

success

Data

base

End

# Use Case Diagram

Online help desk system

Administrator Facilities Heads

(Staffs)

Assignees End-user

(Staffs)

Administrator Use Case

<<extend>>



<<extend>>

<<extend>>

<<extend>>

Administrator

<<extend>>

2. Facility Heads Use Case

<<extend>>

<<extend>>



Facility Heads

(Staff)

<<include>>

<<extend>>

<<extend>>

3. Assignees Use Case

<<extend>>

<<extend>>



Assignees

(Staffs)

4. Students Use Case

<<extend>>

<<extend>>



Students (User)

# Sequence Diagram

Class roles: describe the way an object will behave in context. Use the UML object symbol to illustrate class roles, but don't list object attributes.

Object: Class

Activation: boxes represent the time an object needs to complete a task.



Object: Class

Object: Class

Actor

Activations

Messages: are arrows that represent communication between objects. Use half-arrowed lines to represent asynchronous messages. Asynchronous messages are sent from an object that will not wait for a response from the receiver before continuing its tasks.



Object: Class

Object: Class

Actor

Messages

Lifelines: are vertical dashed lines that indicate the object's presence over time.



Object: Class

Object: Class

Actor

Lifelines

## Login



Login

Home Page

User

1: Request Login Page

2: Display Login Page

3: Input UserName,

Password

4: Process

5: Login Successful

|  |  |  |
| --- | --- | --- |
| **Use Case Name** | **Login** | |
| **Actors** | Administrator, Staff, End-User | |
| **Description** | Actors use this use case to login to system | |
| **Requirements** |  | |
| **Pre-Conditions** |  | |
| **Post-Condition** |  | |
| **Basic Flow** | Actors action  1. Actors click on “Login “ button  3. Actors enter username and password into form.  4. Actors click “Login”  button  [alternative] | System Response  2. The system display ”Login” page the following control:  - “Username” text field  - “Password” text field  - “Login” button  - “Cancel” button  5. The system validate Username and Password  6. The system log Actors into system. |
| **Alternative Flow** | Actors action  [alternative] Actors click Cancel button | System Response  System return to Homepage |
| **Exceptions** | Actors action  [exception1] Actors provide invalid Username and Password | System Response  1. System display message: “The username or password provided are incorrect” |

## Logout



Login

Login

User

1:Request Logout 2: Logout

3: Request to Login 4:Logged out

|  |  |  |
| --- | --- | --- |
| **Use Case Name** | **Logout** | |
| **Actors** | Administrator, Staffs, End-User | |
| **Description** | Actors use this use case to login to system | |
| **Requirements** |  | |
| **Pre-Conditions** | Already login into the System | |
| **Post-Condition** |  | |
| **Basic Flow** | Actors action  1. Actors click on “Logout “ button  3. Actors click “OK” button  [alternative] | System Response  2. System display message: “Do you want to logout?”  5. System logout Actors. |
| **Alternative Flow** | Actors action  [alternative] Actors click Cancel button | System Response  System return to previous page |
| **Exceptions** |  |  |

## Change Profile



Change

Change Profile Page

Form Change

User

1: Request change Profile 2: Get change Page

4: Display change Page 3: Display change Page

5: User enter update information of profile

6: Update information

8: If true, display message successful 7: Validate

If false, come back step 5 data

|  |  |  |
| --- | --- | --- |
| **Use Case Name** | **Change Profile** | |
| **Actors** | Administrator, Staffs, End-User | |
| **Description** | Actors change information | |
| **Requirements** | Login | |
| **Pre-Conditions** | Already login into the System | |
| **Post-Condition** | Logged in on website  Success: Information of User was updated  Fails: Display message error | |
| **Basic Flow** | Actors action  1. User select change profile    3. User enter new information  4. User click submit  6. Display message successful | System Response  2. System display Change Profile page  5. System validate entered information |
| **Alternative Flow** | Actors action  [alternative1] Actors click Cancel button | System Response  Back to the profile page |
| **Exceptions** | [exception1] Actor provide invalid information | System display message error |

## Insert Facilities (Facilities Heads)



Add New facilities Page

Manage facilities

Facilities

Facilities Heads

1: Request add new facilities

2: Get add new facilities Page

3: Display add new facilities Page

4: Display add new

facilities Page

5: Input facilities information 6: Create new facilities

7: Return result of validation Valid

8: If true, display message add new facilities successful

If false, come back step 5

|  |  |  |
| --- | --- | --- |
| **Use Case Name** | **Add new facilities** | |
| **Actors** | Facilities Heads | |
| **Description** | Facilities Heads add new facilities | |
| **Requirements** | Login | |
| **Pre-Conditions** | Login by Facilities Heads | |
| **Post-Condition** | Success: Information of facilities was add new  Fails: Display message error | |
| **Basic Flow** | Actors action  1. Actor click on “Insert”  3. Enter information of facilities, and click “Add” button  5. Display message successful | System Response  2. System display add new facilities form  4. System will validate info  6. New facilities was added to database (with ID is unique) |
| **Alternative Flow** | Actors action  [alternative1] Actors click Cancel button | System Response  Back to the previous page |
| **Exceptions** | [exception1] Actor provide invalid information | System display message error |

## Delete Facilities (Facilities Heads)



Facilities

Manage facilities

Facilities Heads

1: Request delete facilities

2: Find facilities

If not fount, 3: If fount select facilities to delete

come back step 1

4: Delete facilities

5: Process

6: Return result of deletion

7: Display delete

success or not

|  |  |  |
| --- | --- | --- |
| **Use Case Name** | **Delete Facilities** | |
| **Actors** | Administrator | |
| **Description** | Admin Delete facilities | |
| **Requirements** | Login | |
| **Pre-Conditions** | Login by Admin | |
| **Post-Condition** | Success: information of Facilities was deleted  Fails: Display message error | |
| **Basic Flow** | Actors action  1. Search facilities which want to search by Name or ID  3. select facilities which want to delete  4. Click “Delete” button  6. Display message successful | System Response  2. System display result of search  5. System display message to confirm  7. Facilities was deleted in database |
| **Alternative Flow** | Actors action  [alternative1] if result is empty, come back step 1  [alternative2] if Admin No select option, come back step 2 | System Response |
| **Exceptions** | [exception1] Cannot delete if it has some relative of foreign | System display message error |

## 6. Insert Staffs, End-User (Admin)



Add New Staffs, End-User Page

Staffs, End-User

Manage Staffs, End-User

Admin

1: Request add new Staffs,

End-User

2: Get add new Staffs, End-User Page

3: Display add new Staffs, End-User Page

4: Display add new

Staffs, End-User Page

5: Input Staffs, End-User information 6: Create new Staffs, End-User

7: Return result of validation Valid

8: If true, display message add new facilities successful

If false, come back step 5

|  |  |  |
| --- | --- | --- |
| **Use Case Name** | **Add new Staffs, End-User** | |
| **Actors** | Admin | |
| **Description** | Admin add new Staffs, End-User | |
| **Requirements** | Login | |
| **Pre-Conditions** | Login by Admin | |
| **Post-Condition** | Success: Information of Staffs, End-User was add new  Fails: Display message error | |
| **Basic Flow** | Actors action  1. Actor click on “Insert”  3. Enter information of facilities, and click “Add” button  5. Display message successful | System Response  2. System display add new facilities form  4. System will validate info  6. New facilities was added to database (with ID is unique) |
| **Alternative Flow** | Actors action  [alternative1] Actors click Cancel button | System Response  Back to the previous page |
| **Exceptions** | [exception1] Actor provide invalid information | System display message error |

## Update Staffs, End-User (Admin)



Manage Staffs, End-User

Update Staffs, End-User Page

Staffs, End-User

Admin

1: Request update

Staffs, End-User 2: Find Staffs, End-User

If not fount, 3: If fount Staffs, End-User

come back step1 select to edit

6: Display edit

Staffs, End-User Page 4: Get edit Staffs, End-User Page

5: Display edit Staffs,

End-User Page

7: Input facilities information 8: Edit End-User Page

9: Return result of validation Valid

10: If true, display message edit facilities successful

If false, come back step 7

|  |  |  |
| --- | --- | --- |
| **Use Case Name** | **Update Staffs, End-User** | |
| **Actors** | Administrator | |
| **Description** | Admin Update Staffs, End-User | |
| **Requirements** | Login | |
| **Pre-Conditions** | Login by Admin | |
| **Post-Condition** | Success: information is updated into system database  Fails: Display message error | |
| **Basic Flow** | Actors action  1. Actor click on “Update”  3. Update new information of facilities  4. Click “Update” button [alternative1]  6. Display message successful | System Response  2. System display Update form  5. System will validate info [exception1]  7. System update new information to database |
| **Alternative Flow** | Actors action  [alternative1] Actors click Cancel button | System Response  Back to the previous page |
| **Exceptions** | [exception1] Actor provide invalid information | System display message error |

## Delete Staff, End-User (Admin)



Manage Staffs, End-User

Staffs, End-User

Admin

1: Request delete Staffs, End-User

2: Find Staffs, End-User

If not fount, 3: If fount select Staffs, End-User to delete

come back step 1

4: Delete Staffs, End-User

5: Process

6: Return result of deletion

7: Display delete

success or not

|  |  |  |
| --- | --- | --- |
| **Use Case Name** | **Delete Staffs, End-User** | |
| **Actors** | Administrator | |
| **Description** | Admin Delete Staffs, End-Users | |
| **Requirements** | Login | |
| **Pre-Conditions** | Login by Admin | |
| **Post-Condition** | Success: information of Users was deleted  Fails: Display message error | |
| **Basic Flow** | Actors action  1. Search users which want to search by Name or ID  3. select users which want to delete  4. Click “Delete” button  6. Display message successful | System Response  2. System display result of search  5. System display message to confirm  7. Users was deleted in database |
| **Alternative Flow** | Actors action  [alternative1] if result is empty, come back step 1  [alternative2] if Admin No select option, come back step 2 | System Response |
| **Exceptions** | [exception1] Cannot delete if it has some relative of foreign | System display message error |

## Receive and process requests (Assignees)

## End-User send request



Request Page

Request

Home Page

Student

1: Request send “Request”

2: Select facilities

and write descriptions

3: Get data

4: Process

5: Return result request

6: Notifies send successful message

|  |  |  |
| --- | --- | --- |
| **Use Case Name** | **End-Users send Request** | |
| **Actors** | End-Users | |
| **Description** | End-Users send Request | |
| **Requirements** | Login | |
| **Pre-Conditions** | Login by Student | |
| **Post-Condition** | Success: Request has been sent  Fails: Display message error | |
| **Basic Flow** | Actors action  1. Student select facilities and write descriptions  2. Click “Send” button  4. Display message successful | System Response  3. System display message to confirm  8. Request was created in database |
| **Alternative Flow** | Actors action  [alternative1] Actors click Cancel button | System Response  Back to the previous page |
| **Exceptions** | [exception1] Actor provide invalid information | System display message error |

# Entity Relationship (E-R) Diagram

## Entity

Staffs:

Staff

End-user:

End-user

Request:

Request

Admin

Admin

Image:

Image

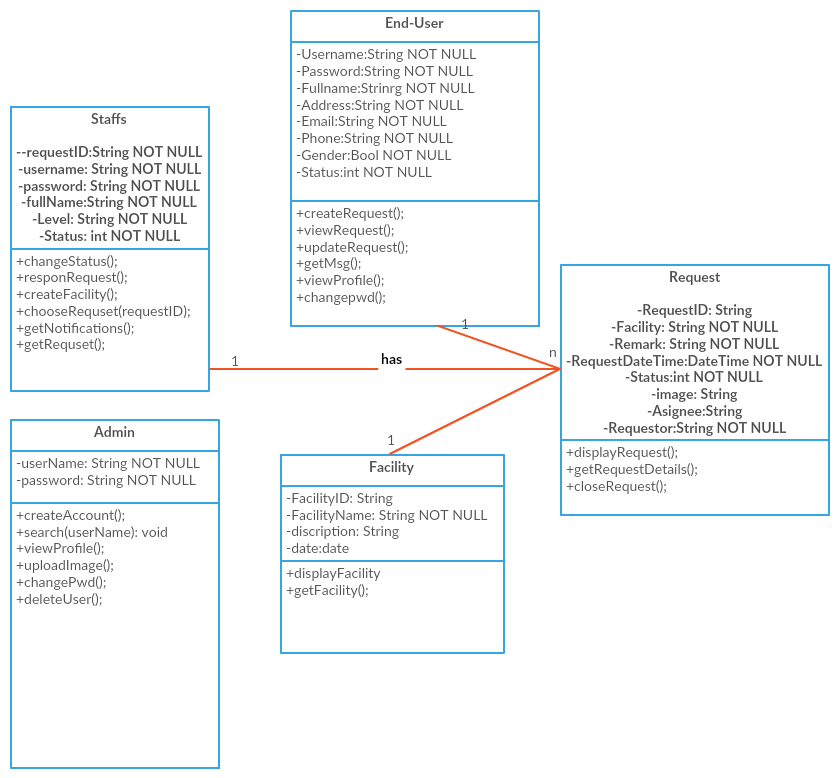
Facility

Facility

## E-R Diagram:

|  |
| --- |
| n  1  Has  Facility  n  1  1  1  n  1  1  Has  Has  Request  Has  Image  Admin  Staffs  End-user |

# Class Diagram



# **Task sheet review 2**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Project Ref. No: 4 | Project Title:  Railway Reservation Manage System | Date of Preparation of Activity Plan | | | |
| No. | Task | Actual Start Date | Actual Days | Team Member Names | Status |
| 01 | Architecture & Design of the Project | Oct ,28,2018 | 5 | All Members | Completed |
| 02 | Algorithms - Data Flowchart | All Members | Completed |
| 03 | USE CASE DIAGRAM | All Members | Completed |
| 05 | Sequence DIAGRAM | All Members | Completed |
| 06 | Entity Relationship (E-R) Diagram | All Members | Completed |
| 07 | Class DIAGRAM | All Members | Completed |
| 08 | Task Sheet | All Members | Completed |

|  |  |  |
| --- | --- | --- |
|  | Prepare By: Group 4 | Approved By: Faculty |
| Date: Nov,2, 2018 | Team Leader  Nguyen Hoang Tu | Tran Phuoc Sinh |