**ASSIGNMENT 1 FRONT SHEET**

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| **Qualification** | **BTEC Level 5 HND Diploma in Computing** | | |
| **Unit number and title** | Unit 30: Application Development | | |
| **Submission date** |  | **Date Received 1st submission** |  |
| **Re-submission Date** |  | **Date Received 2nd submission** |  |
| **Student Name** |  | **Student ID** |  |
| **Class** |  | **Assessor name** |  |
| **Student declaration**  I certify that the assignment submission is entirely my own work and I fully understand the consequences of plagiarism. I understand that making a false declaration is a form of malpractice. | | | |
|  |  | **Student’s signature** |  |

**Grading grid**

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| P1 | P2 | P3 | M1 | M2 | D1 |
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| **❒ Summative Feedback: ❒ Resubmission Feedback:** | | |
| **Grade:** | **Assessor Signature:** | **Date:** |
| **Lecturer Signature:** | | |

**ASSIGNMENT 1 BRIEF**

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| --- | --- | --- | --- |
| **Qualification** | **BTEC Level 5 HND Diploma in Computing** | | |
| **Unit number** | Unit 30: Application Development | | |
| **Assignment title** | Analysis and Design solution for a given problem | | |
| **Academic Year** | 2020 – 2021 | | |
| **Unit Tutor** | Vinh Hoang | | |
| **Issue date** | 07 Dec 2020 | **Submission date** | 07 Dec 2020 |

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| **Submission Format:** |
| Submissions include 3 documents:   * A software design document in PDF format. Writing must be professional. * An evaluation document in PDF format. Writing must be professional. * A presentation document in Powerpoint format. |
| **Assignment Brief and Guidance:** |
| **Scenario**: As the technology is being developed rapidly nowadays, FPT Co. desires to build the  continuing study environment throughout the corporation. It is necessary to develop a system, which manages the activity of “Training” for internal training program of the company. This system can be used to manage trainee accounts, manage trainers, manage course categories, manage courses, manage topics, assign topic to course, assign trainer to topic, assign trainee to course.  This is a system used by HR department. We have four roles in this system, an administrator, training staff, a trainer and trainnes. The detailed description of those roles can be viewed in the attached document (Requirements.docx).  **Tasks**  You and your team need to prepare a software design document with the following sections:   * A requirement specification which explores the problem by a set of user and system requirements, as well as determine any risks related to the successful completion of your application. You are advised to use an SRS template or modify one to complete this task. * An evaluation section in which you research the use of software development tools and techniques and identify any that have been selected for the development of this application. You should compare them and justify your choices. * A design section in which you use chosen tools from previous step to produce design diagrams for your solution based on the requirement specification.   Your team (2 members / team maximum) also needs to present your work based on this document.  **Guidance**  **Task 1 – Software Requirements Specifications**  First, you need to write Software Requirements Specification to describe user and system requirements. You can use included template (SRS-template.docx).  For Risk analysis and management, you need to identifies Risks (for e.g., technical problem, Human Resource, Time Management, etc.) and perform Risk Management Plan by using included template (Risk-management-plan-template.docx)  *Word limit: No word limit*  **Task 2 – Technologies evaluation**  For this part, you need to perform a set of evaluation of different software development tools, techniques and technologies for the project such as:   * Tools to design UML * Tools to design User Interface * Architectural Pattern (MVC – MVP – MVVM) * Tools for source control management * Cloud provider (AWS, Azure, GCP, Heroku) * Programming Languages ( C#, PHP, Java, JS, Python, Ruby, etc.) * Development Framework (ASP.NET, ASP.NET Core, Laravel, Symfony, Yii, Spring/ Hibernate, Ruby on Rail, Flask, Django, etc.) * Database (MySQL, SQL Server, MongoDB, PostgreSQL, etc.) * Software Development Models   In order to make your chosen tools, techniques and development tools clearer, you will have to justify your choice with clear explanations and evidences.  Then, you have to conclude which tool, technology that are described above to make the project.  Then you will illustrate all your findings on how to use these by drawing the overview  *Word limit: 5000 – 7000 words*  **Task 3 – Presentation**  You will produce a presentation to summarize all of your findings about: User and system requirements, Technologies evaluation. |

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| Learning Outcomes and Assessment Criteria | | |
| Pass | Merit | Distinction |
| LO1 Produce a Software Design Document by analysing a business-related problem and deduce an appropriate solution including a set of initial requirements | | LO1 & 2  D1 Justify the tools and techniques chosen to realise a custom built website. Justify your preferred selection of tools and techniques in deducing an appropriate solution to a business related problem. |
| P1 Explore a business-related problem and produce a well-defined Problem Definition Statement supported by a set of user and system requirements.  P2 Determine any areas of risk related to the successful completion of your application. | M1 Analyse a business-related problem using appropriate methods and produce a well-structured Software Design Document that defines a proposed solution and includes relevant details on requirements, system analysis, system design, coding, testing and implementation. |
| LO2 Use design and development methodologies with tools and techniques associated with the creation of a business application | |
| P3 Research the use of software development tools and techniques and identify any that have been selected for the development of this application. | M2 Compare the differences between the various software development tools and techniques researched and justify your preferred selection as well as your preferred software development methodology. |

# LO1. PRODUCE A SOFTWARE DESIGN DOCUMENT BY ANALYSING A BUSINESS-RELATED PROBLEM AND DEDUCE AN APPROPRIATE SOLUTION INCLUDING A SET OF INITIAL REQUIREMENTS

## P1. EXPLORE A BUSINESS-RELATED PROBLEM AND PRODUCE A WELL-DEFINED PROBLEM DEFINITION STATEMENT SUPPORTED BY A SET OF USER AND SYSTEM REQUIREMENTS.

system can be used to

* Manage trainee accounts
* Manage trainers
* Manage course categories
* Manage courses
* Manage topics
* Assign topic to course
* Assign trainer to topic
* Assign trainee to course.

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| administrator’s role | * Can login to the system through the first page of the application * Can create/edit/delete new user account for trainer/training staff and assign/change (if existing user) username and a password |
| training staff’s role | * A registered training staff, who is assigned a user name and a password by the administrator logs in can create trainee accounts by entering details like trainee name, trainee accounts, age, date of birth, education, main programming language, TOEIC score, experience details, department, location, etc. * After entering successfully all details for trainees, his/her details are then stored in the database. The training staff is given a list of trainees for him to view and search. From the list of trainees, he can also search by trainee account, programming language, TOEIC score… * Can update, delete trainee accounts * Can manage course categories such as searching, adding, updating and deleting course categories. Course category includes the information such as course category name and descriptions. * Can manage courses such as searching, adding, updating and deleting courses. Course includes course name and description. * Can add topics such as topic name and topic descriptions into a course, add courses into a category. * Can manage trainer profile such as adding, updating and deleting the information: Trainer name, External or Internal Type, working place, telephone, and email address. * Can assign trainer to a topic. * Can assign trainee to a course. |
| trainer’s role | * Can view courses which have a topic he is assigned to. |

### Introduction

As the technology is being developed rapidly nowadays, FPT Co. desires to build the continuing study environment throughout the corporation. It is necessary to develop a web-based system, which manages the activity of “Training” for internal training program of the company. This document lays out a project plan for the development of Training System.

The intended readers of this document are current and future developers working on Training System and the sponsors of the project. The plan will include, but is not restricted to, a summary of the system functionality, the scope of the project, scheduling and delivery estimates, project risks and how those risks will be mitigated, the process by which I will develop the project, and metrics and measurements that will be recorded throughout the project.

#### 1.1. Document Purpose

We look forward to building a continuous learning environment throughout the corporation. Need to develop a web-based system, manage the operation of the internal training program of the company's internal training program. This system can be used for trainee account management, lecturer management, course catalog management, course management, subject management, course assignment, lecture assignment member for the topic, assigning trainees. This is a system used by human resources.

#### 1.2. Product Scope

This system can be used for trainee account management, lecturer management, course catalog management, course management, subject management, course assignment, lecture assignment member for the topic, assigning trainees. This is a system used by human resources. We have three roles in this system, an administrator, training staff and coach.

#### 1.3. Intended Audience and Document Overview

This document is intended to be used by members of the project team that will implement and verify the correct functioning of the system. Also including Subject Teacher, and Those authorized to score and examine at the University of Greenwich allie with FPT Education.

Managing trainer, trainee, course, topic is a highly complex task and requires precision, so it's a nightmare to just use it manually with notebooks or spreadsheet software. That process It takes a lot of time and effort, and it shouldn't be so. Because of that, I developed a application to automate that process, accurately, space-save, quickly and inexpensively.

#### 1.4. Definitions, Acronyms and Abbreviations

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| --- | --- |
| **Acronyms And Abbreviations** | **Defunition** |
| CRUD | Create/Read/Update/Delete a record in database |
| JSP | JavaServer Pages |
| SRS | Software Requirement Specification |

#### 1.5. Document Conventions

In general this document follows the IEEE formatting requirements. Use Calibri font size 12 throughout the document for text. Use italics for comments, highlighting that have special significance usng bold text. Document text should be single spaced, each line have 1.5 spacing height and maintain the 1” margins found in this template. For Section and Subsection titles, the subsection should be 0.5 cm to the right from its parent.

#### 1.6 References and Acknowledgments

### The Overall Description

#### 2.1. Product Overview

#### 2.2. Product Functionality

**Administrator features:**

* Can log into the system through the first page of the application.
* Can create / edit / delete new user accounts for trainers / trainers and assign / change usernames (if they are current users) and passwords.

**Features of training staff:**

* A registered training employee, an administrator who assigns a username and password, can create a trainee account by entering details such as trainee name, trainee account, age , date of birth, education, main programming language, TOEIC score, detailed experience, department, location, etc.
* After successfully entering all details for the student, his / her details will be stored in the database. The training staff is provided with a list of practitioners for him to see and search. From the trainee list, he can also search by trainee account, programming language, TOEIC score
* Can update, delete trainee accounts
* Can manage course categories such as searching, adding, updating and deleting course categories.
* The course list includes information such as the name and description of the course catalog.
* Can manage courses like searching, adding, updating and deleting courses. The course includes the course name and description.
* Can add topics such as topic names and topic descriptions on a course, adding courses to a category.
* Can manage lecturer profiles such as adding, updating and deleting information: Trainer's name, external type or Internal, workplace, phone and email address.
* Can assign coaches to a topic.
* Students can be assigned to a course.

**Trainer:**

* In the same system, the coach registered by the administrator can log in and can update his / her profile such as the Coach's name, External type or Internal, educational, workplace type , phone and email address.
* Can see the courses with topics he is assigned.

**Trainne:**

* It is possible to view the courses with topics they are assigned.

#### 2.3. Design and Implementation Constraints

The Internet connection is a constraint for the application. Since the application fetches data from the database over the Internet, it is crucial that there is an Internet connection for the application to function.

web application will be constrained by the capacity of the database. Since the database may be forced to queue incoming requests and therefore increase the time it takes to fetch data.

We will use the COMET (Concurrent Object Modeling and Architectural Design Method) for software design and the UML modeling language.

#### 2.4. Assumptions and Dependencies

One assumption about the product is that it will always be used on the device that have enough performance. If the device does not have enough hardware resources available for the application, for example the users might have allocated them with other applications, there may be scenarios where the application does not work as intended or even at all.

The web interface will always be displayed on the screen of the laptop or PC and working on the Chrome browser. Because the current version does not support responsive design on the phone screen as well as testing in another browser except Chrome.

### Requirements Specification

#### 3.1. External Interface Requirements

##### 3.1.1. Hardware Interface

The system has no hardware interface requirements

##### 3.1.2. Software Interface

##### 3.1.3. Communications Interface

#### 3.2. Functional Requirements

##### 3.2.1. F1-Login

|  |  |  |
| --- | --- | --- |
| **Actors Role** | User | |
| **Description** | User login into system and used it | |
| **Requirement** | Provides valid username and password | |
| **Pre-condition** | None | |
| **Basic Flow** | **Actor Action** | **System Response** |
| 1. Actor provides valid username 2. Actor provides valid password 3. Actor click “Login” | 1. System will display the interface suitable for each account if the user logs in to the correct account 2. System will show Error message if invalid username or password |

##### 3.2.2. F2-Logout

|  |  |  |
| --- | --- | --- |
| **Actors Role** | User | |
| **Description** | User can log out of the system after use | |
| **Requirement** | None | |
| **Pre-condition** | F1 | |
| **Basic Flow** | **Actor Action** | **System Response** |
| 1. Actor click “Logout” | 1. System logs out the user account and displays the login layout |

##### 3.2.3. F3-List Account By Role

|  |  |  |
| --- | --- | --- |
| **Actors Role** | Admin | |
| **Description** | The administrator can view the list of corresponding accounts in the system for each role | |
| **Requirement** | The administrator chooses the role they want to see | |
| **Pre-condition** | Actor has logged as Admin | |
| **Basic Flow** | **Actor Action** | **System Response** |
| 1. Actor login system by admin account 2. Administrator chooses the role they want to see | 3. System will show the list of respective accounts |

##### 3.2.4. F4-Create Account

|  |  |  |
| --- | --- | --- |
| **Actors Role** | Admin | |
| **Description** | Admin want to create new account | |
| **Requirement** | The administrator selects the corresponding role for the account that they want to create | |
| **Pre-condition** | Actor has logged as Admin | |
| **Basic Flow** | **Actor Action** | **System Response** |
| 1. Actor login system by admin account 2. Administrator chooses the role they want to create account 3. Administrator provides username and password 4. Administrator provides password again (must true with previous) 5. Administrator click Create button when done | 7. The system will save the new account created in the database |

##### 3.2.5. F5-Change Password

|  |  |  |
| --- | --- | --- |
| **Actors Role** | Admin | |
| **Description** | The administrator can change the password of the account they want | |
| **Requirement** | The administrator provides new password of the account they want | |
| **Pre-condition** | Actor has logged as Admin | |
| **Basic Flow** | **Actor Action** | **System Response** |
| 1. Actor login system by admin account 2. The administrator chooses the role of the account they want to change 3. The administrator selects "Change Password" immediately for the corresponding account 4. The administrator provides a new password 5. The administrator re- enter that password again 6. The administrator clicks the “Confirm” button after it's done | 1. The system updates the corresponding password in the database |

##### 3.2.6. F6-Search Trainee

|  |  |  |
| --- | --- | --- |
| **Actors Role** | Training Staff | |
| **Description** | Ministry can search trainee that they want to find | |
| **Requirement** | Provides trainee’s information to search | |
| **Pre-condition** | Actor has logged as training staff | |
| **Basic Flow** | **Actor Action** | **System Response** |
| 1. Actor login system by training staff account 2. Actor choose “Manage Trainees” 3. Actor choose “Search Trainee” 4. Actor provides keyword of trainee’s kill they want to find 5. Actor click button “By Skill” when done 6. Actor can provide max- min TOEIC score of trainee they want to find 7. Actor click button “By TOEIC” when done | 1. System will show account that correct with require 2. System will show “Not found” if that incorrect data or not exists. |

##### 3.2.7. F7 Manage Trainee

|  |  |  |
| --- | --- | --- |
| **Actors Role** | Training Staff | |
| **Description** | Ministry want to add, edit, assign for trainee | |
| **Requirement** | * The system must has an empty account was created by admin before ministry create trainee account * Provides trainee’s profile when they want to create or edit trainee account. Or assign course for trainee | |
| **Pre-condition** | Actor has logged as training staff | |
| **Basic Flow** | **Actor Action** | **System Response** |
| 1. Actor login system by training staff account 2. Actor choose “Manage Trainees” 3. Actor choose “Add Trainee” to create trainee 4. Actor choose account was empty and provides: Name, Date of Birth (format dd/mm/yyyy), Address, Title, Department, Education, Main skill, TOEIC score, Experience, Portrait picture of trainee 5. Actor click “Create” button when done. 6. Actor choose “Edit Trainee” to edit trainee 7. Actor provides new: Name, Date of Birth (format dd/mm/yyyy), Address, Title, Department, Education, Main skill, TOEIC score, Experience, Portrait picture of trainee 8. Actor click “Update” button when done. 9. Actor choose “Assign Course” to assign course for trainee 10. Actor choose course was not teachers yet 11. Actor click “Confirmed” when done | 1. System will store new profile of trainee if actor create or update trainee 2. System will show error and actor must be providing data again that valid if incorrect data 3. System will add trainee was choose into course was selected if actor choose “Assign Course” |

##### 3.2.8. F8-Manage Trainer

|  |  |  |
| --- | --- | --- |
| **Actors Role** | Training Staff | |
| **Description** | Ministry want to add, edit, assign for trainer (must has an empty account was created by admin before ministry create trainer account) | |
| **Requirement** | Provides trainer’s profile when they want to create or edit trainer account. Or enroll course for trainer | |
| **Pre-condition** | Actor has logged as training staff | |
| **Basic Flow** | **Actor Action** | **System Response** |
| 1. Actor login system by training staff account 2. Actor choose “Manage Trainers” 3. Actor choose “Add Trainer” to create trainee 4. Actor choose account was empty and provides: Name, Type, Department, Education, Phone, Email, Portrait picture of trainer 5. Actor click “Create” button when done. 6. Actor choose “Edit Trainer” to edit trainer 7. Actor provides new Name, Type, Department, Education, Phone, Email, Portrait picture of trainer 8. Actor click “Update” button when done. 9. Actor choose “Enroll Course” to enroll course for trainer 10. Actor click “Confirmed” when done | 1. System will store new profile of trainee if actor create or update trainer 2. System will show error and actor must be providing data again that valid if incorrect data 3. System will add trainer was choose into course was selected if actor choose “Enroll Course” |

##### 3.2.9. F9-Manage Categories

|  |  |  |
| --- | --- | --- |
| **Actors Role** | Training Staff | |
| **Description** | Ministry want to add new category, update an exists category or delete category | |
| **Requirement** | Provides category’s name and category’s description to add new or update category | |
| **Pre-condition** | Actor has logged as training staff | |
| **Basic Flow** | **Actor Action** | **System Response** |
| 1. Actor login system by training staff account 2. Actor choose “Manage Categories” 3. Actor choose “Create Category” to create category 4. Actor provides: Name, Description of Category 5. Actor click “Create” button when done. 6. Actor choose “Edit” to edit category 7. Actor provides: Name, Description of Category 8. Actor click “Update” button when done. 9. Actor choose “Delete” to delete category (just can delete category haven’t course | 1. System will store new category if actor create category 2. System will store new category’s information if actor edit category 3. System will delete category if actor delete category 4. System will show error message if delete category has course |

##### 3.2.10. F10-List Category By Id

|  |  |  |
| --- | --- | --- |
| **Actors Role** | Training Staff | |
| **Description** | Ministry can view all categories in system | |
| **Requirement** | Category Must Exist | |
| **Pre-condition** | Actor has logged as training staff | |
| **Basic Flow** | **Actor Action** | **System Response** |
| 1. Actor login system by training staff account 2. Actor choose manage category | 1. System will show the list of category |

##### 3.2.11. F11-Manage Course

|  |  |  |
| --- | --- | --- |
| **Actors Role** | Training Staff | |
| **Description** | Ministry want to add new course, update an exists course or close course (cannot open course again if close, just see course was closed on database) | |
| **Requirement** | Provides course’s name and course’s description to add new or update course | |
| **Pre-condition** | Actor has logged as training staff | |
| **Basic Flow** | **Actor Action** | **System Response** |
| 1. Actor login system by training staff account 2. Actor choose “Manage Courses” 3. Actor choose “Create Course” to create course 4. Actor provides: Name, Description of course 5. Actor click “Create” button when done. 6. Actor choose “Edit” to edit course 7. Actor provides: Name, Description of course 8. Actor click “Update” button when done. 9. Actor choose “Close” to close course | 1. System will store new course if actor create course 2. System will store new course’s information if actor edit course 3. System will change active status from true to false if close course if actor close course |

##### 3.2.12. F12-List Course By Category

|  |  |  |
| --- | --- | --- |
| **Actors Role** | Training Staff | |
| **Description** | Ministry can view all courses in choosen category | |
| **Requirement** | Category must exist | |
| **Pre-condition** | Actor has logged as training staff | |
| **Basic Flow** | **Actor Action** | **System Response** |
| 1. Actor login system by training staff account 2. Actor choose manage   courses   1. Actor Select the   corresponding category to see all course inside | 4. System will show the list of course that correct with category was selected |

##### 3.2.13. F13-Show Profile Details

|  |  |  |
| --- | --- | --- |
| **Actors Role** | User | |
| **Description** | User want to see their profile | |
| **Requirement** | None | |
| **Pre-condition** | Actor has logged in | |
| **Basic Flow** | **Actor Action** | **System Response** |
| 1. Actor login system by thier account 2. Actor Choose Profile On the Navigation Bar | 1. List all trainer’s information |

##### 3.2.14. F14-Edit Trainer Profiles

|  |  |  |
| --- | --- | --- |
| **Actors Role** | Trainer | |
| **Description** | Trainer want to update their information | |
| **Requirement** | Trainer must Provides their new information | |
| **Pre-condition** | Actor has logged as trainer | |
| **Basic Flow** | **Actor Action** | **System Response** |
| 1. Actor login system by trainer account 2. Actor choose “Edit Trainer” to edit trainer 3. Actor provides new Name, Type, Department, Education, Phone, Email, Portrait picture 4. Actor click “Update” button when done. | 5. System will update new information in database. |

##### 3.2.15. F15-List Topics Of The Course

|  |  |  |
| --- | --- | --- |
| **Actors Role** | Trainer | |
| **Description** | Trainer want to see their topics | |
| **Requirement** | None | |
| **Pre-condition** | Actor has logged as trainer | |
| **Basic Flow** | **Actor Action** | **System Response** |
| 1. Actor login system by trainer account 2. Actor choose “View Course” | 3. List all topics in course |

##### 3.2.16. F16-View Course

|  |  |  |
| --- | --- | --- |
| **Actors Role** | Trainer | |
| **Description** | Trainer want to see their courses | |
| **Requirement** | None | |
| **Pre-condition** | Actor has logged as trainer | |
| **Basic Flow** | **Actor Action** | **System Response** |
| 1. Actor login system by trainer account 2. Actor choose Course tab | 1. List all courses |

##### 3.2.17. F17-Edit Trainee Profile

|  |  |  |
| --- | --- | --- |
| **Actors Role** | Trainee | |
| **Description** | Trainee want to update their information | |
| **Requirement** | Provides new information | |
| **Pre-condition** | Actor has logged as trainee | |
| **Basic Flow** | **Actor Action** | **System Response** |
| 1. Actor login system by trainee account 2. Actor choose “edit” to edit trainee 3. Actor provides new: Name, Date of Birth (format dd/mm/yyyy), Address, Title, Department, Education, Main skill, TOEIC score, Experience, Portrait picture of trainee 4. Actor click “Update” button when done. | 5. System will store new profile of trainee |

##### 3.2.18. F18-List Teaching Course

|  |  |  |
| --- | --- | --- |
| **Actors Role** | Trainer | |
| **Description** | Trainer want to see their courses | |
| **Requirement** | Course must exist in database | |
| **Pre-condition** | Actor has logged as trainer | |
| **Basic Flow** | **Actor Action** | **System Response** |
| 1. Actor login system by trainer account 2. Actor choose "My Course" | 1. List all trainer’s courses |

##### 3.2.19. F19-List Learning Course

|  |  |  |
| --- | --- | --- |
| **Actors Role** | Trainee | |
| **Description** | Trainee want to see their course | |
| **Requirement** | None | |
| **Pre-condition** | Actor has logged as trainee | |
| **Basic Flow** | **Actor Action** | **System Response** |
| 1. Actor login system by trainer account 2. Actor choose "My Course" | 1. List All Trainee's Course |

##### 3.2.20. F20-Manage Topic

|  |  |  |
| --- | --- | --- |
| **Actors Role** | Trainer | |
| **Description** | Trainer want to add new topic, update an exists topic or delete topic | |
| **Requirement** | Provides topic’s title and topic’s content to add new or update course | |
| **Pre-condition** | Actor has logged as trainer | |
| **Basic Flow** | **Actor Action** | **System Response** |
| 1. Actor login system by trainee account 2. Actor choose “Manage Topics” 3. Actor choose “Add Topic” to create course 4. Actor provides: Title, Content of topic 5. Actor click “Create” button when done. 6. Actor choose “Edit” to edit course 7. Actor provides: Title, Content of topic 8. Actor click “Update” button when done. 9. Actor choose “Delete” to delete topic | 1. System will store new topic if actor create topic 2. System will store new topic’s information if actor edit topic 3. System will delete topic if actor choose delete |

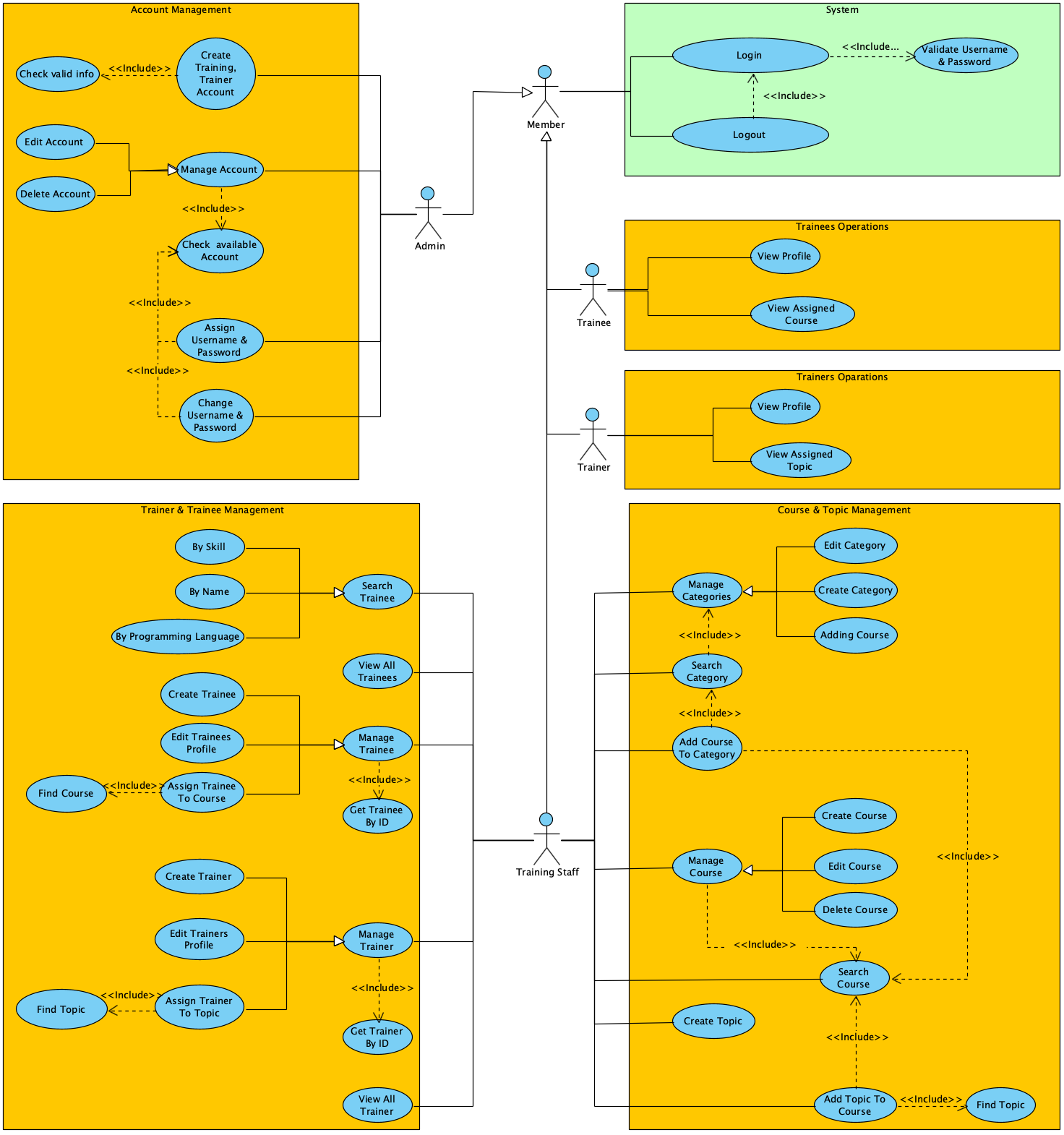
##### 3.2.21. F21-List Topics Of The Course

|  |  |  |
| --- | --- | --- |
| **Actors Role** | Trainee, Trainer | |
| **Description** | Trainee, Trainer want to see their topics in each course | |
| **Requirement** | Must choose Course to view its Topics | |
| **Pre-condition** | Actor has logged as trainer, trainee  The Course Must Exist | |
| **Basic Flow** | **Actor Action** | **System Response** |
| 1. Actor login system by trainee account 2. Actor choose “Manage Topics” 3. Actor choose Course | 3. List all topics in selected course |

##### 3.2.22. F22-Assign Trainee To Course

|  |  |  |
| --- | --- | --- |
| **Actors Role** | Trainer | |
| **Description** | Trainer want to assign trainee to course | |
| **Requirement** | Trainee and Course must exist in database | |
| **Pre-condition** | Actor has logged as trainer | |
| **Basic Flow** | **Actor Action** | **System Response** |
| 1. Actor login system by trainer account 2. Actor choose “Manage Course” to asign trainee 3. Actor choose topic 4. Actor choose trainee 5. Actor click add button | 1. System will update new information in database. |

#### 3.3. Use Case Model



## P2. DETERMINE ANY AREAS OF RISK RELATED TO THE SUCCESSFUL COMPLETION OF YOUR APPLICATION.

# LO2. USE DESIGN AND DEVELOPMENT METHODOLOGIES WITH TOOLS AND TECHNIQUES ASSOCIATED WITH THE CREATION OF A BUSINESS APPLICATION

## P3. RESEARCH THE USE OF SOFTWARE DEVELOPMENT TOOLS AND TECHNIQUES AND IDENTIFY ANY THAT HAVE BEEN SELECTED FOR THE DEVELOPMENT OF THIS APPLICATION.

### Design Tool

### Development Tool and Techinique