School of Information Technology

IT1166 / IT1566 / IT1666 / IT1866 / IT1966
App Development Project

Project Guidebook
AY2021 S2

1. Introduction

1.1 Aims

This module provides students with the practical experience of applying the concepts of object-oriented programming to develop software components that are maintainable and extensible. Students shall work in teams to develop, test and implement innovative and interactive applications to solve real life problems using Design Thinking methodology and Agile process.

1.2 Learning Outcome

At the end of this module, students will be able to:

- Explain and apply the concepts of classes, encapsulation, inheritance and polymorphism in object-oriented programming in software development.
- Apply the key concepts of object-oriented programming to construct maintainable and extensible software applications.
- Apply design thinking approach to create innovative and human-centric applications to solve real life problems.
- Plan and execute a project as a team iteratively and deliver the solutions in a timely manner according to the given requirements.

2. Project Scenario

2.1 Background

You are a group of creative, innovative, and energetic programmers who intend to drive the digital innovation of a company/industry by digitalising their existing businesses and creating an interactive and immersive online experience. Using Design Thinking methodology, each team shall come up with the project proposal/specification, create the design, and build the entire (web) application that can help the company/industry switch to digital.

Account management, transaction processing, customer support, and report generation are the general features of an application for two groups of users:

- Public / Customer

  This group shall do online transactions, submit enquiries and provide feedback. The customer interfaces are desktop PCs, kiosks and mobile devices (e.g. smartphones, tablets, etc.).

- Staff

  The staff shall do backend processing of transactions and generate reports for analysis to make critical decisions for the company. The staff interface is desktop PC based.

2.2 Company/Industry

- Choose one company or industry that your team would like to digitalise their business as part of their innovation drive.

2.3 Minimum Feature Requirements

- Must be web-based, primarily targeting desktop and laptop users.
- Must utilize Python classes and objects in the application.
- Must implement persistent storage for Python objects (e.g Shelve).
- Data validation to ensure data consistency must be performed.
- Information update operation must be performed via persistent storage (e.g Shelve).

2.4 Additional Features (where applicable)

- Features to enhance security of the application
- Interfaces for batch uploading of data
- Data visualization on data collected
- Alert notification on content changes monitoring

2.5 Tools and Technologies

The application framework for this project shall be Flask for building web applications with Python. Where appropriate, you may utilize additional development tools, such as JQUERY and Bootstrap.

3. Project Assessment

Project comprises 80% of the total module mark.

3.1 Assessment Components

Week	Deliverables	Individual	Group	Total
9	Proposal Presentation			20%
	- Presentation	5%		
	- Innovation		5%	
	- Prototype Proposal	5%	5%	
13	Progress Review	15%		15%
15	Technical Review	10%	5%	15%
18	Final Presentation			30%
	- Integration		10%	
	- Final Solution	10%		
	- Reflection	5%	5%	
		50%	30%	80%

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