COMP 1531 S2 Group Project
Online Survey System

Aim:

The aim of this group project is to enable students to consolidate their knowledge in the fundamental principles of Software Engineering and apply the theoretical concepts to a "hands-on" software engineering problem. The project will enable students to:

- Develop problem-solving skills to solve 'real-world' software engineering problems; analyse the problem domain, design and develop a solution to the problem
- Learn to work effectively as part of a team by managing your project, planning, and allocation of responsibilities among the members of your team
- Gain experience in collaborating through the use of a source control
- Apply good design practices and methodologies in the development of their solution

Background:

Your consultancy firm has been called in to the School of Computer Science and Engineering for a new project. The university needs a new survey system for effectively collecting course feedbacks from students and CSE has been assigned the responsibility of overseeing the design and implementation of the system. The advisory board has decided on a draft proposal for the survey system.

The survey system will consist of an admin user who will be responsible for creating a survey. The admin will have login credentials for the survey system. As an admin, the person should be able to create a pool of generic questions. All the questions on the system will be multiple-choice based questions. Admins will have an option to see all the questions that have been added so far. The admin should be able to create a survey form for any course offering that is running in a particular semester using some or all of the questions from this pool.

Once a survey has been created, the administrator will make available a link to the created survey and any respondent (from the general public) can use that link to fill out the survey. At the completion of the survey, when the respondent clicks on Submit, the survey responses are written to a flat file. There will be one file per course offering (a course offering is a subject offered in a particular semester e.g., COMP 1531 17S2). Enrolments have made available a "CSV" file containing a list of current course offerings to the survey system. A respondent can fill out the survey any number of times. The respondents will not have access to the file containing the survey responses. At any point, the admin will be able to read the responses from the surveys that are active and produce a statistical report of the survey results. When required, the admin can make available a link to the survey results for the general public. Respondents will only be able to access pages on the platform through links provided by the admin and hence, no authentication is required for them.

The customer has informed your consultancy firm that they are still unsure of all their requirements, but these are their preliminary requirements. Keeping this in mind, your consultancy firm has decided that this project will be delivered adopting an agile software development methodology to give the team flexibility to be able to adapt to the customer changes.

Group Project Requirements

Teams

1. For this project, you will need to organise yourself into teams of 4 (no more than 4), and all the team members must be from the same lab session.
2. Nominate one person from your team as the team master. This person will be responsible for registering the team on GitHub (this exercise will be done in Week 03 lab) and the other members of the team will join the team

Implementation Guidelines

1. Keeping mind that an Agile Software Development style has been chosen for this project, your team will be required to build and deliver the project in iterations. Each iteration will deliver a part of the requirements of the project during which the team members are expected to carry out all the SDLC activities, namely analysis, design, coding and testing. At the end of the iteration, you (as a team) will demonstrate to your lab class the functionality implemented during that iteration cycle. Your team must bear in mind that project requirements may be subject to change and enhancements to functionalities may be made at the end of the iteration. You will need to carefully design the solution for your current iteration, such that the solution is extensible to accommodate these changes. Deliverables for each iteration will be outlined at the start of each iteration cycle.

2. For this iteration, no sophisticated authentication is required to be implemented. When the URL of the survey application is specified, e.g., http://localhost:8080/mySurvey, this should launch a login page that prompts the admin user to enter a username and password. A simple, authentication scheme is suggested below:

```
# Create a dictionary and initialize “admin” as a key with
# value = admin's chosen password
users = {“admin”:"password"}
def check_password(user_name, password):
    """
    :param user_name: The name of the user
    :param password: Password provided by the user
    """
    if password == users[user_name]:
        return True
    return False
```

3. Public respondents will not require a login. A public respondent is only required to launch the survey URL (as published by the admin after creating a survey for a particular course-offering) in a browser window, which will directly take them to the particular survey.

4. For this iteration, survey responses for each course offering are to be written to a flat file. Your team can choose an appropriate format to store the responses

5. This project will be implemented using **Python/Flask/Jinja2**. Students are free to use any front-end tools such as HTML, CSS or any CSS frameworks (e.g., Material CSS, Bootstrap etc.,) to build the UI for the application but kindly note support will be offered by course staff only on the core technology stack namely Python, Flask and Jinja2.

6. All necessary artifacts for this project e.g., CSV file given by the "Enrolment system" can be downloaded from the project folder on GitHub. The link to the downloadable artifacts is as follows: https://github.com/cse1531S1/cs1531-group-project

Scheduled Deliverables

The planned dates for the different stages of the project deliverables are outlined below.

- Week 4 Lab Session: Presentation of user stories for the project (10%)
- Week 6 Lab Session: Demonstration of iteration 1 (20%)
- Week 10 Lab Session: Demonstration of iteration 2 (30%)
- Week 13 Lab Session: Final Group Project Demonstration (40%)

Group Project Iteration 1 Deliverables

1. Week 4 Lab Session:

Prior to your lab session, your team of consultants must schedule collaboration sessions, to have initial high-level visioning discussions during which you will brainstorm to identify epic stories from the customer requirements and their key features, break-down high-level user stories to smaller user-stories and detail each user story to identify key conditions of satisfaction, error-conditions etc. From these discussions, your team is expected to produce a pdf report that outlines the following:

1. High Level Epic Story
2. Epic Story broken into User Stories – Each user-story must define:
   - a unique status identifier (e.g., UC1),
   - a short description of the feature based on Role-Goal-Benefit template (Refer to the RGB model described in the lectures)
   - an estimate for the implementation of the user story in user story points (e.g., UC1 = 2 User story points, where each point = 2.5 hours)
   - acceptance criteria for each user story (Refer to the 3 C's model described in the lectures)
   - priority of implementation

2. Week 6 Lab Session:

During this lab session, you will demonstrate the first iteration of your working software. For this iteration, the customer has requested that they are only interested in seeing the following features implemented-(1) the admin should be able to create questions and a survey for a course offering based on these questions (2) the respondent should be able to complete a survey for a course-offering given a link to the course survey. The customer is not interesting in the visualisation of the survey results for this iteration.

The task for your consultancy firm for this iteration is:

- Select a subset of user-stories from the set of user-stories produced in week 4 for implementation
- Allocate responsibilities to each team member
- Document key design decisions (Hand-drawn class diagrams, sequence diagrams or activity diagrams will suffice)
- Maintain a log that records the responsibilities allocated to each team member, progress of tasks using a velocity chart (a hand-drawing will suffice, no sophisticated tool needed), summary of decisions made in stand-up meetings