Munster Technological University
Computer Science Dept.

COMP7039 – Agile Processes

Assessment 2

Group Project – 30%

Please form groups of **4** members from your ***scheduled lab group***.

Your group is to investigate how the ***GitHub Actions*** Continuous Integration **(CI)** facility adds value to team of software developers. Your investigations will likely involve material(s) look-up, case-study(s) examination, on-line video(s) watching, and any other approach(s) that adds to your (individual & collective) knowledge, understanding, and practical application of CI in a GitHub environment.

Instructions:

Using the accompanying ***project brief*** and (partial) ***Python code***, demonstrate how a team of software developers might employ agile principles, work visualisation, and continuous integration to develop functionally cohesive, accurate, and robust software artefacts in which the team has a high degree of confidence.

You will need to **configure** GitHub Actions to ***automatically build*** your codebase whenever a change is ***pushed*** to GitHub.

You may find the following helpful:
https://docs.github.com/en/actions/automating-builds-and-tests/building-and-testing-python#using-the-python-starter-workflow

Project Management Tasks:

1. Using the supplied project brief, create a comprehensive ***Product Backlog***.
2. Employ either a ***Sprint Backlog*** or a ***Kanban "Ready"*** column to prepare your work-tasks, prior to execution.
3. Use physical ***and*** digital workboards (e.g. **Trello)** to illuminate your project-tasks and to manage them over 4 x 5-day ***Sprints***. Include your Lab-supervisor in your digital board membership
4. Plot a Sprint ***Burndown Chart*** in Excel in the second half of **each** lab, *excluding the first/kick-off lab.*
5. Ensure that your group demonstrates your physical workboard **and** Burndown chart during each lab session.

Project Deliverables:

Weekly Actions:

- **Submit Excel file containing:**
  - i) Screenshot of your group Trello board taken at the end of **each** lab.
  - ii) Group Burndown Chart **– weeks 2, 3, 4**.

  (3 submissions x 10% each)……..**(30%)**

- **Report Progress & Plan**

  Informal demo & verbal report on progress and plan for the next sprint.

Final Project Report:

1. Document the setup and configuration of your GitHub Actions CI pipeline; include screenshots where helpful & appropriate.
2. Discuss your experience of developing software while employing GitHub Actions CI. Your discussion should address ease of setup, ease of use, usefulness of GitHub Actions CI, challenge(s) encountered & resolution(s).

(50%)

Project Demo:

Your team will be required to provide an informal demonstration (max.15 mins.) of your group's work and findings from your lab-sessions; this will occur during Week 11(Week starting Nov. 27, 2023).

(20%)

Submission Instructions:

1. Submit an Excel file containing a **screenshot** of your group **workboard** & your **Burndown Chart** on Canvas **each week** at the end of each lab. Use the following labelling convention for week 1 submission:
   Group_name_CI_Status_Week_01

2. Submit a .pdf copy of your group project report ***< 12 A4 pages*** with font-size 12, line-spacing 1.5 on Canvas by:

   Friday, December 01, 2023 @ 13:00.

   Use the following labelling convention for your group project report submission: *Group_name_CI_Report_2023*

Ensure that your Group Name, names and student IDs for <u>each</u> of the group members are listed on the cover page of your group's report.
Remember to include page numbers and an accurate Table of Content in your report.
One *report-submission per group.*

Be Aware:

Submitted reports will be passed through the MTU plagiarism detection tool.
Reports that contain plagiarised material(s) will earn a mark of ***zero*** for all group(s)-members.

Best of luck!