Technology Product Development Accelerator – Full Stack Developer

Certificate in Technology Product Development (Level 4)

Mission X – Final Portfolio Assessment

This Mission is designed to assess learner competence against the following learning objectives:

- **Learning Outcome 1 -** Analyse and select best fit solutions of existing and upcoming technologies in order to develop a technology product solution.
- **Learning Outcome 2 -** Apply broad technical knowledge to develop a technology product solution.
- **Learning Outcome 3 -** Apply self-directed learning and self-reflection techniques with the purpose of becoming a lifelong learner.
- **Learning Outcome 4 -** Apply security and technology product development best practices to deliver quality outcomes in the context of practice.
- **Learning Outcome 5 -** Apply collaboration skills to work as an effective team member.

Assessment Method

In order to successfully complete this formally assessed Mission, learners are required to submit a portfolio of evidence which includes the following three (3) items:

Jointly prepared team submissions:

1. An oral product demonstration (maximum 15 minutes) to an audience that includes the Mission Ready project assessor
2. A link to your team's GitHub project

Individually prepared learner submissions:

3. A completed Project Evaluation Form

Each of these items is assessed on the basis of whether learner submissions meet each of the competency statements relating to the five learning outcomes. Evaluation of learner performance requires the completion of ALL components of assessment, to the standards identified in the assessment rubric, in order to successfully complete this Mission.

Time Allowance and Due Date

Learners are given this Mission in week 5 of the programme, and it must be completed by the end of week 12.

Resubmissions

The Assessor will provide the learner with feedback on the extent to which his/her work has met the requirements specified by the relevant learning outcomes. In the event that a genuine attempt has been made to meet those requirements, but one or more elements of the assessment have not been successfully completed, the learner will be allowed to submit a revised version of his/her work in response to those elements. The revised work must be submitted within 7 days of receiving the initial result.

Mission Assessment Criteria Rubric

Learning Outcome 1	
Learning Outcome	Analyse and select best fit solutions of existing and upcoming technologies in order to develop a technology product solution.
Evidence Required	Project evaluation form content that includes an: - analysis and selection of technical assets to accelerate product development - analysis of upcoming technologies which may be applied to the product solution

Validation Criteria	**Met/Not Met**
Does the project evaluation form contain an analysis of technical asset alternatives available for product development, and a selection of specific assets from those alternatives? (Technical assets may include, but are not limited to development languages, code libraries, and frameworks).	
Does that analysis provide an adequate rationale for the assets finally selected?	
Does that analysis identify the main benefits and limitations of the assets selected?	
Do the selected assets provide an appropriate platform for development of an effective product solution?	
Do the selected assets enhance the efficacy or efficiency of development, or the usability, performance, functionality, security, or reliability of the product solution.	
Does the project evaluation form identify at least one emerging technology? (Emerging technologies may include, but are not limited to artificial intelligence and virtual reality).	
Is a web link to an identified emerging technology included in the project evaluation form?	
Does the project evaluation form include discussion of the main benefits and limitations of the emerging technology as it applies to the recommended product solution?	

Learning Outcome 2	
Learning Outcome	Apply broad technical knowledge to develop a technology product solution.
Evidence Required	Physical demonstration of a prototype product that adequately meets the requirements of the Mission brief. Project evaluation form content that includes a link to a Github account that demonstrates a professional approach to coding.

Validation Criteria	**Met/Not Met**
Is the programme constructed run on either Safari, Chrome, FireFox, or Edge?	
Is the programme written in Javascript?	
Is the programme hosted on a public server or a team member's laptop?	
Can the home page be accessed by either desktop or mobile phone?	

Does the presentation include at least two separate pages for each team member? (e.g. if a team of four, at least eight pages must be shown in the presentation).	
Does the presentation include the use of at least four (4) of these techniques? - variables declared at the beginning of their appropriate scope - related functions grouped together in the same file - minimum redundant/non-used code - technical assets organised in a logical folder structure - in-line comment to state naming conventions - files, variables, and functions are named with appropriate names and follow a consistent convention (either snake case or camel case) - relevant, inline comments to explain less intuitive logic	
Does the presentation demonstrate an adequate level of functionality in the pages that the team has built?	
Has the team constructed a relational database that includes tables for the following datasets: - help_request - student - teacher - project - student_projects	
Does the presentation include an explanation of the GUI, the servers used, the backend code and the relational database?	
Is the oral presentation delivered within allocated time limits?	
Is the individual learner sufficiently involved in the delivery of the team's oral presentation?	
Does each of the presenters demonstrate sufficient knowledge and understanding of the material s/he is presenting?	
Does the oral presentation make appropriate use of visual aids?	
Does the Project Evaluation Form contain a valid link to the Github account used to host the programme source code?	

Learning Outcome 3		
Learning Outcome	Apply self-directed learning and self-reflection techniques with the purpose of becoming a lifelong learner.	
Evidence Required	Project evaluation form content that includes a description of preliminary research undertaken by the team and reflection on subsequent learnings. Product demonstration content that shows how the team's research findings were applied to programme design.	
Validation Criteria		**Met/Not Met**
Does the Project Evaluation Form include a description of the team's preliminary research work conducted at the outset of this Mission?		
Does the Project Evaluation Form describe how research findings were applied to the coding required for this Mission?		

Does the Project Evaluation Form clearly identify the source of any research findings applied to the construction of this programme?	
Does the Project Evaluation Form include the learner's comments related to the experience of developing a technology solution?	
Does the Project Evaluation Form include analysis of the learner's identified areas of performance strength within the project?	
Does the Project Evaluation Form include identification of at least one technical or coding practice that should be included in the learner's future professional development activity?	
Does the Project Evaluation Form include identification of at least one non-technical practice that should be included in the learner's future professional development activity?	

Learning Outcome 4		
Learning Outcome	Apply security and technology product development best practices to deliver quality outcomes in the context of practice.	
Evidence Required	Source control in the Github account demonstrates the adoption of adequate cybersecurity precautions. Project evaluation form content includes description of what security practices have been applied or should be applied.	
Validation Criteria		**Met/Not Met**
Are adopted or recommended security measures adequately explained in either (a) relevant in-line comments; or (b) specific comments in the Project Evaluation Form?		
Does the learner's work in source control show evidence of at least two (2) of the following elements: - testing and defect fixing (e.g. writing comments to highlight bug fixes) - formative peer review of code (e.g. change suggestion comments within code - formal code review in GitHub)		

Learning Outcome 5		
Learning Outcome	Apply collaboration skills to work as an effective team member.	
Evidence Required	Project Evaluation Form content includes a statement of individual work undertaken and self-assessment of collaboration skills.	
Validation Criteria		**Met/Not Met**
Does the Project Evaluation Form confirm that the learner was assigned responsibility for at least two (2) pages of the completed application?		
Does the Project Evaluation Form confirm that the learner was assigned full stack (front end and back end) responsibility for at least one page of the completed application?		
Does the Project Evaluation Form include the description of an instance in which the learner changed his/her behaviour as a result of input from team members?		
Does the Project Evaluation Form include the description of an instance in which one or more team members changed their behaviour as a result of input from the		

learner?	
Does the Project Evaluation Form contain a self-reported analysis of the learner's ability to work collaboratively with others?	
Does the Project Evaluation Form contain an analysis of other team members' ability to work collaboratively?	