Year 11 Digital Solutions 2019

fIA1: Technical Proposal – Low Fidelity Online Shop

February 2019

Investigation – Technical Proposal - FORMATIVE

This instrument is designed to allow students to demonstrate learning outcomes of UNIT 1, Digital Solutions v1.2. It echoes the summative item that will do a similar job in Unit 3.

It is acknowledged that students will have more experience and skills when they attempt the summative item. It is thought this investigation is a useful pre-cursor to surface skills, processes and structures that will later be important, as such it shares many of the same characteristics as the summative item, scaled back where appropriate to match student ability and course progress.

Unit 1 – Creating with Code

The assessment instrument is used to determine student achievement in the following objectives:

1. recognise and describe programming elements and useability principles
2. symbolise and explain information, ideas and interrelationships related to programming problems
3. analyse problems and information related to a selected technology context
4. determine user experience and programming requirements, and self-determined and prescribed criteria of a programming problem
5. synthesise information and ideas to determine possible prototype digital solutions
6. generate user interface and programmed components of the prototype digital solution
7. evaluate impacts, components and solutions against criteria to make refinements and justified recommendations
8. make decisions about and use mode-appropriate features, language and conventions for particular purposes and contexts.

	St Joseph's College, Gregory Terrace	***f IA1*** ***Formative Assessment***
	Student name:	**Student number:**
	Teacher name: Mr Peter Whitehouse	
	Date handed out:	**Date due:**

Subject	Digital Solutions
Technique	Investigation – Technical Proposal
Unit	Unit 1 – Creating with Code
Topic	Topic 1: Understanding Digital Problems Topic 2: User Experiences and Interfaces Topic 3: Algorithms and programming techniques Topic 4: Programmed Solutions

Details			
Conditions			
Duration	Up to 5 weeks		
Mode	Multimodal	**Length**	Multimodal Presentation 7-10 minutes
Individual/ group	Individual	**Other**	• The reference list is not included in the presentation time • The school will implement Authentication strategies that reflect QCAA guidelines.
Resources available	Computers, Internet, Classroom resource website, Class resource OneNote		

Context

The retail sector in recent years has undergone a fundamental transformation – physical shopfronts are being replaced by online stores, with customers able to browse products, order and pay for these items (and shipping). All too often customers go to a physical retail outlet, try/examine the goods and then order them online (for better prices usually). Online transactions involve electronic transfer of funds, which in turn requires security, accessibility and device agnosticism.

Task

Prepare a technical proposal for a basic "online shop". You will identify a well-controlled section of the retail market that has a LIMITED range of products, and explore the technologies, develop algorithms for sections of the purchase process, generate code backend segments and conceptual infrastructure of this proposed business. You will evaluate your solution in terms of existing models of online shops, social and ethical implications of online shopping. Students will present a MULTIMODAL PRESENTATION encapsulating key features of your technical proposal, for presentation to the imagined CLIENT whose business you are modelling.

To complete this task, you must:

- Recognise and describe:
  - Appropriate programming development tools
  - Usability principles and user-interface components
  - Existing solutions to similar problems
- Symbolise using mind maps and a collection of annotated wireframe diagrams:
  - The elements of the design problem, including user persona, device/platform features and functionality
  - User interface
- Explain:
  - User experiences, Usability principles and accessibility features
  - Programming features
- Analyse the problem and information to identify:
  - Boundary or scope of the problem
  - Constraints and limitations of the environment
  - User-interface relationships
  - User experience
  - Possible personal, social and economic impacts
  - Possible solutions
- Determine:
  - requirements from the user perspective for the user experience
  - programming requirements
  - prescribed and self-determined criteria
- Synthesise information and ideas to select the best approach for
  - user interface(s)
- Generate a low-fidelity (non/partially-coded) prototype solution demonstrating user interface
- Evaluate against criteria the
  - personal, social and economic impacts and considerations to identify risks
  - user-interface prototype
  - low-fidelity non-coded/partially coded prototype digital solution
- Make refinements and justified recommendations
- Communicate:
  - information and ideas to inform a technical audience
  - the technical feasibility of developing the prototype solution, including the technical aspects of the development process, e.g. algorithms, selection and justification of development tools, user-interface sketches, user-experience requirements.

Stimulus

Stimulus materials can be accessed on the Terrace Digital Solutions page: http://www.wonko.info/ds/

Checkpoints

☐	Term 1 Week 7: Item Issued
☐	Term 1 Week 9 25/3/2019: Part A: Mindmap, Wireframe/Interface Design
☐	Term 2 Week 3 7/5/2019: Complete Draft submission
☐	Term 2 Week 4 17/5/2019: Final Submission

Assessment Objectives

1. recognise and describe programming elements and useability principles
2. symbolise and explain ideas and interrelationships between proposed solution and identified pr
3. analyse problems and information related to the selected technology context
4. determine programming and user-experience requirements of the identified problem and presc
5. synthesise information and ideas to determine possible data elements, user interface and algo solution
6. generate a technical proposal for user interfaces and algorithm components of the low-fidelity r
7. evaluate impacts, components and low-fidelity prototype against prescribed and self-determine justified recommendations
8. make decisions about and use mode-appropriate features, language and conventions for writte technical audience

1.

Criterion	Marks Allocated	Result
Retrieving and Comprehending Assessment Objectives 1,2	5	
Analysing Assessment Objectives 3,4	6	
Synthesising and Evaluating Assessment Objectives 5,6,7	6	
Communicating Assessment Objective 8	3	
Total	**20**	

Feedback

Authentication strategies

- You will be provided some class time for task completion.
- You will provide documentation of your progress at indicated checkpoints.
- Your teacher will collect and annotate a **draft by 7/5/2019**.
- You must acknowledge all sources.
- Your teacher will conduct interviews after submission to clarify or explore aspects of your response.

Scaffolding

This assessment requires you to demonstrate the use of the EDGE problem-solving strategy:

Part A:

Explore

- Restate the problem (bullet points)
- Analyse the human need
  - Collect data for relevant stakeholders, Describe user persona, Explore existing solutions
- Decompose the problem into its different parts using a mindmap
- Identify the requirements – based on the previous step, create a bullet point list of the essential elements, components and features of the solution. You may include some initial user interface sketches
- Recognise constraints – personal, social and economic constraints

Develop

Includes formalised diagrams to show user interface, systems and sub-systems. These may include:

- IPO charts. Site map, Wireframes
  - more formalised designs of user interface that may include technical information such as dimensions, navigation, functionality and suggested styling
  - If necessary, include design for different devices/platforms.

Part B:

Generate

Produce a low-fidelity (non/partially-coded) prototype solution

Evaluate & Refine

This should take place continuously throughout the previous stages. Evidence of your ability to evaluate and refine should include the following:

- Feedback from users about the user interface and functionality
- Criteria checklists
- Recommendations for current and future improvements

Multimodal Presentation

Your final presentation should show how you applied each of the stages listed above. It should use two or more communication modes (eg written, spoken, visual) and can be delivered via different media or technologies (a web pageincluding visual effects, oral language, written language and still or moving images; a slideshow or animation documenting the application of the problem-solving process; multimedia movies that may combine photographs, video, sound, text and a narrative voice).

Use the following headings in your response:

- Introduction (up to 1 minute)
- The user story (3 minutes)
- The data story (3 minutes)
- The proposed solution (3 minutes)
- Conclusion (up to 1 minute)

There is no requirement for this presentation to be performed or conducted in front of the class or the teacher.