Introduction

Information systems arise out of problems, needs and opportunities that involve people and data. The development and implementation of an effective information system requires the combination of a broad range of knowledge and skills, including a firm grasp of the information processes, the creativity to construct an unidentified solution to a poorly defined problem, and a command of numerous project management techniques.

Project Scenario

The James Ruse Agricultural High School senior executive is currently interested in bolstering the amount of digital multimedia content available to students and staff for the purpose of supporting and encouraging effective teaching and learning, particularly of higher order concepts and skills.

Each individual is required to select a unique topic or unit of work associated with a specific subject within the school, and for that unit create a content-diverse multimedia product that can be accessed through an online hub.

All media types must be clearly evident in the final product, and should be employed in a way that creatively and professionally showcases the unique strengths of each type.

Assessed Outcomes

H1.1 Applies and explains an understanding of the nature and function of information technologies to a specific practical situation

H1.2 Explains and justifies the way in which information systems relate to information processes in a specific context

H2.2 Develops and explains solutions for an identified need which address all of the information processes

H3.1 Evaluates and discusses the effect of information systems on the individual, society and the environment

H4.1 Proposes and justifies ways in which information systems will meet emerging needs

H6.1 Analyses situations, identifies needs, proposes and then develops solutions

H7.1 Implements and explains effective management techniques

H7.2 Uses methods to thoroughly document the development of individual and team projects

Explicit project management techniques, as laid out in the System Development Life Cycle, are to be integrated into the designer's operational approach to this task. All participants are required to use a hybrid of the Structured and Spiral approaches for the completion of their multimedia system.

Participants are permitted to choose between (α) building their system as an extension of the current school cloud-based intranet or (β) constructing an independent system with their selection of authoring, scripting or programming software. Designers who choose option β will be provided with a simple file hosting server for the final implementation of their system, but not during the system's development.

Project Stages

This assessment task is comprised of three well-defined chronological stages. Each requires the submission of certain deliverables that relate to the stage.

1. **Planning Stage:** due Wednesday 6 April (Week 11, Term 1)
   In the first stage, significant time and effort must be invested to investigation and planning to ensure that later work is appropriately and efficiently directed. At the end of this stage, participants are required to submit planning documentation that:
   a. Articulates a clear understanding of the system's purpose
   b. Identifies an appropriate set of concrete objectives that will function co-operatively to achieve the system purpose (these may include rich multimedia-based assessment tasks, presentations, instructional videos, web quests, alternate reality games, or other resources up to the discretion of the system designer)
   c. Proposes a series of potential designs and components that align with these objectives
   d. Outlines a realistic schedule for the completion of these components that takes into account the complexity of each component, constraints placed upon the designer, and delays associated with external sources of data.

2. **Prototyping Stage:** due Wednesday 25 May (Week 5, Term 2)
   In the second stage, participants must demonstrate a practical understanding of the spiral development approach by producing two distinct prototypes (an Alpha and a Beta) of their multimedia system that will lead to the release candidate produced in the Implementation Stage. The prototypes are to clearly evidence the specific benefits that arise from the iterative development process: each successive prototype should show specific progressions made in direct response to the preceding prototype's shortcomings.

   Thus, while all of the prototypes will be submitted simultaneously at the end of the prototyping stage, they must be scheduled by participants to be completed in a timeline that provides time for each prototype to be trialled and evaluated by potential users of the system. System testers should represent an appropriate cross-section of the school population. In order to ensure that relevant and critical feedback is supplied by testers, they should be provided with a structured pro forma to guide their evaluation of your system. The entire feedback process must be documented and explicit connections must be made between the evaluations of users and the subsequent advances in each prototype.

   At the end of this stage, participants are required to submit the following:
   a. Alpha prototype: this version of the multimedia system must demonstrate the essential functional features and how they function together to achieve the system's purpose, even though the quality of these features may be very low at this stage. The most likely testers for the Alpha are other system developers.
   b. Beta prototype: this version of the multimedia system must be feature complete and should represent an increase in sophistication and complexity from the Alpha. The focus of the Beta should be on providing an intuitive and helpful user experience for those who will use the system. The most likely testers for the Beta are a selection of users from the system's intended audience.

    c. Documentation of feedback from potential users and resultant changes in the iterative development process, for each of the following stages:
        i. Feedback from the Alpha, and resultant changes in the Beta
        ii. Feedback from the Beta, and planned changes for the Release Candidate

3. **Implementation Stage:** due Wednesday 29 June (Week 10, Term 2)

   In the third stage, at a time negotiated between all system developers, a single release candidate will be produced and distributed to the general school population for a final period of evaluation. Following this release, there will be a dual focus on the refinement of the final product and on reflection upon the entire system development process. At the end of this stage, participants are required to submit the following:

       a. Final product: the completed multimedia system, either uploaded to the school's intranet or delivered physically for uploading to an external file server
       b. Project report: a 1,500 word article incorporating the following elements:
           i. Rationale for the specific components included in the multimedia system (with regard to the usefulness of each media type and the achievement of the system's purpose)
           ii. Outline of the key difficulties encountered during the development process
           iii. Evaluation of the project management techniques used in the design and production of the final product

Project Criteria

Marks will be awarded for:
▶ Original and creative use of appropriate software
▶ Demonstration of competence in the learning outcomes listed above
▶ Balance between scope and depth in the completed product
▶ Depth and clarity of project documentation