VCE Applied Computing 2025–2028

Video 12

Background to Unit 4 Outcome 1
Software Development

VICTORIAN CURRICULUM AND ASSESSMENT AUTHORITY

VICTORIA State Government

Acknowledgement of Country

The VCAA respectfully acknowledges the Traditional Owners of Country throughout Victoria and pays respect to the ongoing living cultures of First Peoples.

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Purpose of this presentation

- Overview of Unit 4 Outcome 1 Software Development
- Major changes to Unit 4 Outcome 1
- Software tools
- Outcome statement
- Key knowledge
- Key skills
- Assessment task

Unit 4 Outcome 1

Changes to Unit 4 Outcome 1

- Established and innovative approaches to software development
- Alpha and beta testing
- Updated assessment task (SAT)

Unit 4 Outcome 1

Software tools

Students are required to use the following software tool:

- An appropriate object-oriented programming language

- An appropriate tool for documenting and modifying project plans
- Programming tools and/or integrated development environments to facilitate programming and testing of solutions

Unit 4 Outcome 1

From the outcome statement

- Develop and evaluate a software solution that meets requirements and assess the effectiveness of the project plan.

Unit 4 Outcome 1 – Key knowledge

- characteristics of efficient and effective solutions, including:
  - user-centred design
  - clear and concise code
  - detailed internal documentation
- characteristics of data types, data structures and data sources for input, storage and output

Unit 4 Outcome 1 – Key knowledge

- features of a programming language, including:
  - local and global variables and constants
  - data types
  - instructions and control structures (sequence, selection, iteration/repetition)
  - arithmetic, logical and conditional operators
  - graphical user interfaces (GUIs)
  - functions and methods
  - classes and objects
  - access modifiers (public, protected and private)

Unit 4 Outcome 1 – Key knowledge

- established and innovative approaches to software development, including:
  - the use of code repositories
  - application programming interfaces (APIs) and libraries
  - artificial intelligence-based (AI) assistants
- validation techniques, including:
  - existence checking
  - type checking
  - range checking

Unit 4 Outcome 1 – Key knowledge

- debugging and alpha testing techniques for checking that solutions meet requirements and function correctly, including the use of:
  - breakpoints
  - commenting out code
  - relevant test data
  - test cases comparing expected and actual output in testing tables

Unit 4 Outcome 1 – Key knowledge

- strategies for conducting beta testing, including:
  - construction of a testing plan and test scenarios
  - observation of testing scenarios
  - documentation of test results
- features of evaluation strategies, including:
  - evaluation criteria
  - time frame
  - responsibility

Unit 4 Outcome 1 – Key knowledge

- techniques for applying evaluation criteria
- factors that influence the effectiveness of project plans, including:
  - scope creep
  - personnel changes
  - technical issues

Unit 4 Outcome 1 – Key knowledge

- techniques for recording the progress of projects, including:
  - adjustments to tasks
  - adjustments to time frames
  - annotations to project plans
  - monitoring and documenting progress using logs/journals
- techniques for assessing the effectiveness of a project plan, including:
  - reviewing the number of changes made to the project plan during the project
  - the reason changes were necessary
  - the impact of changes on the completion of the project.

Unit 4 Outcome 1 – Key skills

- monitor, modify and annotate project plans as necessary
- develop a software solution and write internal documentation
- use and apply appropriate data types, data structures and data sources
- develop and apply suitable naming conventions and validation techniques
- select and apply debugging and alpha testing techniques
- prepare and conduct beta testing using appropriate techniques, capture results and recommend modifications to the software solution to address identified issues
- evaluate the efficiency and effectiveness of the software solution
- assess the effectiveness of the project plan.

Unit 4 Outcome 1

Contribution to final assessment

School-assessed Task for Unit 3 Outcome 2 and Unit 4 Outcome 1 will contribute 30 per cent to the study score.

Unit 4 Outcome 1 – Assessment task

A software solution that meets the software requirements specification

AND

Preparation and conduction of beta testing

AND

- an evaluation of the efficiency and effectiveness of the software solution
- an assessment of the effectiveness of the project plan (Gantt chart) in monitoring project progress

in one of the following:

- a written report
- an annotated visual plan.

Time allocated should be at least 8 weeks of class time.

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