VCE Software Development
School-assessed Task 2024

Video 3
Unit 4 Outcome 1
SAT Criteria 6–10

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.

VCE Software Development School-assessed Task 2024

Video 3
Unit 4 Outcome 1
SAT Criteria 6–10

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VCAA

VICTORIAN CURRICULUM AND ASSESSMENT AUTHORITY

VICTORIA State Government

Outline of presentation

- Nature of task
- SAT Criteria 6–10
- Authentication
- Assessment

Nature of task

Unit 4 Outcome 1

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

Nature of task

A software solution that meets the software requirements specification

And

Preparation and conduction of usability tests

And

- an evaluation of the efficiency and effectiveness of the software solution
- an evaluation of the effectiveness of the selected development model
- 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.

Unpacking the criteria
Criteria 6–10

Scope of task

Development of the software solution

Criterion 6 assesses students' skills in using a programming language to develop a software solution. Students will develop a software solution that uses a range of appropriate processing features, write internal documentation and apply appropriate validation techniques. In order to develop the software solution students are required to use an appropriate programming language that meets the programming requirements of the study.

Students will document evidence of their critical and creative thinking through the modification of designs and evaluation criteria as part of the Development Stage in Criterion 6. Refer to the Skills underpinning the Design Stage in the Units 1 to 4: Problem-solving methodology specifications on page 15 of the study design.

Development of the software solution

Criterion 7 assesses students' skills in managing data and files, and the testing of the software solution. Students will use appropriate data structures to manage data and files, propose and implement procedures to manage the security of their data and files, document the use of testing techniques and test data. Further details regarding solution testing are in the *Advice for teachers*.

The evidence from this task is observed through Observation 7 and assessed through Criteria 6 and 7.

Criterion 6

VCE Software Development: School-assessed Task 2024							
Assessment Criteria	**Levels of Performance**						
	Indicators	**Not shown**	**1–2 (very low)**	**3–4 (low)**	**5–6 (medium)**	**7–8 (high)**	**9–10 (very high)**
Unit 4 Outcome 1 **6. Skills in using a programming language to develop the software solution.**	• Uses a range of appropriate processing features.	Insufficient evidence	Uses limited processing features to develop an incomplete software solution that meets few requirements.	Uses some processing features to develop an incomplete software solution that meets some requirements.	Uses a range of processing features to develop an incomplete software solution that meets most requirements.	Uses a wide range of suitable processing features to develop a software solution that meets most requirements.	Uses a comprehensive range of suitable processing features of the language to develop a complete software solution that meets all requirements.
	• Writes comprehensive internal documentation.		Writes limited internal documentation.	Writes some internal documentation with formatting.	Writes internal documentation that includes relevant program comments and formatting.	Writes internal documentation that includes detailed and relevant program comments and formatting.	Writes internal documentation that includes comprehensive and relevant program comments and formatting.
	• Applies appropriate validation techniques.		Applies limited data validation techniques.	Applies some relevant data validation techniques.	Applies a range of relevant data validation techniques.	Applies a wide range of relevant data validation techniques to check the reasonableness of data.	Applies comprehensive data validation techniques to check the reasonableness and completeness of all input data.
	• Documents evidence of critical and creative thinking through the modification of designs and evaluation criteria.		Lists some evidence of critical and creative thinking through the modification of designs.	Outlines some evidence of critical and creative thinking through the modification and further development of designs.	Documents evidence of critical and creative thinking through the modification of designs, evaluation criteria and listing of some possible contingencies for solution development.	Documents detailed evidence of critical and creative thinking through the modification of designs, evaluation criteria and listing a range of possible contingencies for solution development.	Documents comprehensively evidence of critical and creative thinking through the modification of designs, evaluation criteria and listing a wide range of possible contingencies for solution development.
		0 ❑	1 ❑ 2 ❑	3 ❑ 4 ❑	5 ❑ 6 ❑	7 ❑ 8 ❑	9 ❑ 10 ❑

Criterion 7

VCE Software Development: School-assessed Task 2024							
Assessment Criteria	**Levels of Performance**						
	Indicators	**Not shown**	**1–2 (very low)**	**3–4 (low)**	**5–6 (medium)**	**7–8 (high)**	**9–10 (very high)**
Unit 4 Outcome 1 **7. Skills in managing data and files, and testing the software solution.**	• Organises and manipulates appropriate data structures efficiently to manage data and files.	Insufficient evidence	Organises and manipulates limited data through the use of data structures to manage data.	Organises and manipulates some data through the use of appropriate data structures to manage data and files.	Organises and manipulates a range of data efficiently through the use of appropriate data structures to manage data and files.	Organises and manipulates data efficiently and effectively through the use of appropriate data structures to manage data and files.	Organises and manipulates all data efficiently and effectively through the use of data structures to manage data and files.
	• Proposes and implements procedures to manage the security of data and files.		Proposes limited procedures or techniques to secure data and files.	Proposes and implements some procedures and techniques to manage and secure data and files.	Proposes and implements a range of procedures and techniques to manage and secure data and files.	Proposes and implements a wide range of procedures and techniques to manage and secure data and files.	Proposes and implements comprehensive procedures and techniques to manage the security of all data and files.
	• Documents the use of testing techniques and test data.		Lists some suitable testing techniques and test data.	Outlines some suitable testing techniques and test data.	Documents a range of suitable testing techniques and test data to detect some errors.	Documents a wide range of suitable testing techniques and test data to detect most errors.	Documents a comprehensive range of suitable testing techniques and test data to detect all errors.
		0 ❑	1 ❑ 2 ❑	3 ❑ 4 ❑	5 ❑ 6 ❑	7 ❑ 8 ❑	9 ❑ 10 ❑

An approach to developing the software solution

Student skills should be developed in Unit 3 Outcome 1 to prepare them for Unit 4 outcome 1.

Programming language selected must meet the **Programming requirements** document.

Student software solution should include:

- appropriate processing features of the selected programming language
- suitable data structures
- procedures and techniques for handling and managing files and data
- validation techniques
- internal documentation of code.

Students should also include evidence of critical and creative thinking.

From the *Advice for teachers*

Usability testing

Criterion 8 assesses students' skills in conducting usability testing. Students will document the preparation and conduction of the usability tests. After performing the tests with their client, students will document the results. The results of the usability testing may require modifications to the software solution. Students could choose to make modifications to the software solution or to document the actual modifications they would make to the software solution in a written report.

The evidence from this task is observed through Observation 8 and assessed through Criterion 8.

Criterion 8

VCE Software Development: School-assessed Task 2024							
Assessment Criteria	**Levels of Performance**						
	Indicators	**Not shown**	**1–2 (very low)**	**3–4 (low)**	**5–6 (medium)**	**7–8 (high)**	**9–10 (very high)**
Unit 4 Outcome 1 **8. Skills in conducting usability testing.**	• Preparation and conduction of usability tests.	Insufficient evidence	Prepares a limited usability test that covers few targeted requirements of the solution.	Prepares and conducts a usability test that covers some targeted requirements of the solution.	Prepares and conducts a usability test that covers many of the targeted requirements of the solution.	Prepares and conducts a detailed usability test that covers most targeted requirements of the solution.	Prepares and conducts a comprehensive usability test that covers all targeted requirements of the solution.
	• Documents the results of the usability tests.		Lists some results of the usability tests.	Outlines some of the results of the usability tests.	Documents a range of the results of the usability tests.	Documents detailed results of the usability tests.	Documents a comprehensive set of the results of the usability tests.
	• Documents the modifications to the software solution based on the results of the usability testing.		Lists some modifications to be implemented to the software solution.	Outlines some of the modifications to be implemented to the software solution.	Documents a range of the modifications to be implemented to the software solution.	Documents detailed modifications to be implemented to the software solution.	Documents a comprehensive set of the modifications to be implemented to the software solution.
		0 ❑	1 ❑ 2 ❑	3 ❑ 4 ❑	5 ❑ 6 ❑	7 ❑ 8 ❑	9 ❑ 10 ❑

An approach to usability testing

Students are required to design, conduct and document usability tests that are to be conducted with two or more potential ‘users’ of the software solution. Potential ‘users’ could include the actual clients who will benefit from the development of the software solution or students acting as real users of the software solution. Usability tests could be conducted through surveys or observation of users interacting with the software solution. Results captured should be documented in order to identify errors and issues.

Based on these results from the users, students then make modifications to the software solution accordingly. These modifications should be assessed separately from the originally submitted solution. The intention is that students will make meaningful modifications to the solution when assessed separately and teachers will clearly identify where modifications are present.

From the *Advice for teachers*

Evaluation of the software solution and development model

Criterion 9 assesses students' skills in evaluating the software solution. Students will propose strategies for evaluating the efficiency and effectiveness of the software solution, evaluate the efficiency and effectiveness of the software solution in meeting requirements and evaluate how the use of the selected development model assisted in the development of the software solution.

Students will also need to document evidence of their critical and creative thinking through the evaluation of the analysis, design and development stages and improvements to the solution as part of the Evaluation Stage in Criterion 9. Refer to the Skills underpinning the Solution evaluation activity in the Units 1 to 4: Problem-solving methodology specifications on page 15 of the study design.

The evidence from this task is observed through Observation 9 and assessed through Criterion 9.

Criterion 9

VCE Software Development: School-assessed Task 2024							
Assessment Criteria	**Levels of Performance**						
	Indicators	**Not shown**	**1–2 (very low)**	**3–4 (low)**	**5–6 (medium)**	**7–8 (high)**	**9–10 (very high)**
Unit 4 Outcome 1 **9. Skills in evaluating the software solution.**	• Proposes strategies for evaluating the efficiency and effectiveness of the software solution.	Insufficient evidence	Identifies limited feasible strategies for evaluating the efficiency and effectiveness of the software solution.	Outlines some feasible strategies for evaluating the efficiency and effectiveness of the software solution	Proposes some feasible strategies for evaluating the efficiency and effectiveness of the software solution.	Proposes detailed strategies for evaluating the efficiency and effectiveness of the software solution.	Proposes comprehensive strategies for evaluating the efficiency and effectiveness of the software solution.
	• Documents the evaluation of the efficiency and effectiveness of the software solution in meeting requirements.		Describes how some features of the software solution meet requirements.	Outlines an evaluation of how some of the features of the software solution meet functional requirements. Limited references to the evaluation criteria.	Documents a sound evaluation in terms of efficiency and effectiveness of how the specific features of the software solution meet functional and non-functional requirements. References some of the evaluation criteria.	Documents a detailed evaluation in terms of efficiency and effectiveness of how most of the specific features of the software solution meet functional and non-functional requirements. References most of the evaluation criteria.	Documents a comprehensive evaluation in terms of efficiency and effectiveness of how all specific features of the software solution meet all functional and non-functional requirements. References all the evaluation criteria.
	• Documents the evaluation of how the development model assisted in the development of the software solution.		Describes how the selected development model assisted in the development of the software solution.	Outlines an evaluation of how the selected development model assisted in the development of the software solution.	Documents a sound explanation of effectiveness of how the selected development model assisted in the development of the software solution.	Documents a detailed evaluation of effectiveness of how the selected development model assisted in the development of the software solution.	Documents a comprehensive evaluation of effectiveness of how the selected development model assisted in the development of the software solution.
	• Documents evidence of critical and creative thinking through the evaluation of the analysis, design and development stages and improvements to the solution.		Lists some evidence of critical and creative thinking through the identification of some improvements to the software solution.	Outlines some evidence of critical and creative thinking through some evaluation of the analysis, design and development stages and the identification of some improvements to the software solution.	Documents evidence of critical and creative thinking through the evaluation of the analysis, design and development stages and the identification of improvements to the software solution.	Documents detailed evidence of critical and creative thinking through the evaluation of the analysis, design and development stage and the identification of improvements to the software solution.	Documents comprehensively evidence of critical and creative thinking through the evaluation of the analysis, design and development stage and the identification and description of improvements to the software solution.
		0 ❑	1 ❑ 2 ❑	3 ❑ 4 ❑	5 ❑ 6 ❑	7 ❑ 8 ❑	9 ❑ 10 ❑

An approach to evaluating the software solution and development model

Students should use their evaluation criteria developed in Unit 3 Outcome 2 when evaluating the efficiency and effectiveness of their software solution.

The proposed evaluation strategy for the software solution should assume the implementation of their software solution with their client because actual implementation is not practically feasible for this task.

From the *Advice for teachers*

An approach to evaluating the software solution and development model

The selected development model should be evaluated to determine and discuss its effectiveness in the development of the software solution. Students should state how it enabled them to develop the software solution.

They should also discuss how their initial justifications for using their selected development model were realised throughout the project or whether other development models may have been more suitable.

From the *Advice for teachers*

Assessment of the project plan

Criterion 10 assesses students' skills in assessing the project plan. Students will document the modifications made to the initial project plan throughout the duration of the project and then assess the effectiveness of the project plan.

The evidence from this task is observed through Observation 10 and assessed through Criterion 10.

Criterion 10

VCE Software Development: School-assessed Task 2024							
Assessment Criteria	**Levels of Performance**						
	Indicators	**Not shown**	**1–2 (very low)**	**3–4 (low)**	**5–6 (medium)**	**7–8 (high)**	**9–10 (very high)**
Unit 4 Outcome 1 **10. Skills in assessing the project plan.**	• Documents the modifications made to the initial project plan throughout the duration of the project. • Assesses the effectiveness of the project plan.	Insufficient evidence	Lists some adjustments to the initial project plan. Lists limited factors that contributed to the effectiveness of the project plan.	Outlines some adjustments to the initial project plan during the project. Outlines some factors that contributed to the effectiveness of the project plan.	Documents a range of modifications to the initial project plan during the project using some appropriate techniques. Documents a range of the factors that contributed to the effectiveness of the project plan.	Documents in detail a range of adjustments to the initial project plan during the project using appropriate techniques. Documents in detail a range of factors that contributed to the effectiveness of the project plan.	Documents a comprehensive range of adjustments to the initial project plan during the project using a range of appropriate techniques. Documents a comprehensive range of factors that contributed to the effectiveness of the project plan.
		0 ❑	1 ❑ 2 ❑	3 ❑ 4 ❑	5 ❑ 6 ❑	7 ❑ 8 ❑	9 ❑ 10 ❑

An approach to assessing the project plan

Throughout the SAT process, students should be collecting evidence to support the assessment of the project plan in managing the project.

While not an exhaustive list, this evidence may be in the form of progress journals, annotations to the project plan, photographs of design iterations, annotated drafts of diagrams, annotated code samples, screenshots and feedback from users during usability testing.

From the *Advice for teachers*

Authentication

Authentication

Authentication record form: VCE Applied Computing: Unit 4 Software Development SAT 2024

This form must be completed by the class teacher. It provides a record of the monitoring of the student's work in progress for authentication purposes. This form is to be retained by the school and filed. It may be collected by the VCAA as part of the School-based Assessment Audit.

Student name ..... Student No | | | | | | | | | | |

School ..... Teacher: .....

Component of School-assessed Task	Date observed and submitted	Teacher comments	Teacher's initials	Student's initials
Observation 7: Development of the software solution (Criterion 6 and 7) The student is developing/has developed and tested the software solution.	Observed	Observation of the development of the software solution		
	Submitted	Submission of the software solution		
Observation 8: Usability testing (Criterion 8) The student is preparing and conducting/has prepared, conducted and documented the results of the usability tests.	Observed	Observation of the preparation of usability testing		
	Submitted	Submission of usability testing		
Observation 9: Evaluation of the software solution and development model (Criterion 9) The student is documenting/has documented the evaluation of the software solution and the development model.	Observed	Observation of the development of the evaluation		
	Submitted	Submission of the evaluation		
Observation 10: Assessment of the project plan (Criterion 10) The student is documenting/has documented the assessment of the project plan.	Observed	Observation of the development of the assessment of the project plan		
	Submitted	Submission of the assessment of the project plan		

I declare that all resource materials and assistance used have been acknowledged and that all unacknowledged work is my own.

Student signature ..... Date .....

Assessment

Assessment

2024

Victorian Certificate of Education
Applied Computing: Software Development Assessment Sheet
School-assessed Task

STUDENT NAME

This assessment sheet will assist teachers to determine their score for each student. Teachers need to make judgments on the student's performance for each criterion. Teachers will be required to choose one number from 0–10 to indicate how the student performed on each criterion with comments, as appropriate. Teachers then add the subtotals to determine the total score.

STUDENT NUMBER

ASSESSING SCHOOL NUMBER

Criteria for the award of grades **The extent to which the student demonstrates:**	Not Shown (0)	Very Low (1–2)	Low (3–4)	Med (5–6)	High (7–8)	Very High (9–10)
1 skills in project management	☐	☐	☐	☐	☐	☐
2 skills in the selection and justification of a development model	☐	☐	☐	☐	☐	☐
3 skills in using analytical tools and techniques	☐	☐	☐	☐	☐	☐
4 skills in documenting a software requirements specification	☐	☐	☐	☐	☐	☐
5 skills in designing the software solution	☐	☐	☐	☐	☐	☐
6 skills in using a programming language to develop the software solution	☐	☐	☐	☐	☐	☐
7 skills in managing data and files, and testing the software solution	☐	☐	☐	☐	☐	☐
8 skills in conducting usability testing	☐	☐	☐	☐	☐	☐
9 skills in evaluating the software solution	☐	☐	☐	☐	☐	☐
10 skills in assessing the project plan.	☐	☐	☐	☐	☐	☐

Performance on Criteria: Teacher's Comments
You may wish to comment on aspects of the student's work that led to your assessment.

If a student does not submit the School-assessed Task at all, N/A should be entered in the total score box.

SUBTOTALS ☐ ☐ ☐ ☐ ☐ ☐

TOTAL SCORE ☐

Contact

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