VCE Applied Computing: Software Development: Administrative information for School-based Assessment in 2022

School-assessed Task

The School-assessed Task (SAT) contributes 30 per cent to the study score.

Teachers will provide to the Victorian Curriculum and Assessment Authority (VCAA) a score against each criterion that represents an assessment of the student’s level of performance for Unit 3 Outcome 2 and
Unit 4 Outcome 1. The recorded scores must be based on the teacher’s assessment of the student’s performance according to the criteria on pages 6−15. This assessment is subject to the VCAA’s statistical moderation process.

The 2022 VCE Applied Computing: Software Development assessment sheet on page 19 is to be used by teachers to record the SAT score. The completed assessment sheet must be made available on request by the VCAA*.*

The mandated assessment criteria are published annually on the Applied Computing: Software Development study page of the VCAA website and notification of their publication is given in the February *VCAA Bulletin*.

Details of authentication requirements and administrative arrangements for School Assessed Tasks are published annually in the [*VCE and VCAL Administrative Handbook 202*](https://www.vcaa.vic.edu.au/administration/vce-vcal-handbook/Pages/index.aspx)*2*.

The Authentication record form on pages 17–18 is to be used to record information for each student and must be made available on request by the VCAA.

The SAT has seven components. They relate to:

* Unit 3 Outcome 2 (four components)
* Unit 4 Outcome 1 (three components)

Teachers should be aware of the dates for submission of scores into VASS in July and November. These dates are published in the 2022 Important Administrative Dates and Assessment Schedule, published annually on the VCAA website. [vcaa.vic.edu.au/pages/schooladmin/admindates/index.aspx](http://www.vcaa.vic.edu.au/pages/schooladmin/admindates/index.aspx)

Unit 3

Software development: analysis and design

Outcome 2

Analyse and document a need or opportunity, justify the use of an appropriate development model, formulate a project plan, generate alternative design ideas and represent the preferred solution design for creating a software solution.

Nature of task

A project plan (Gantt chart) indicating tasks, times, milestones, dependencies and critical path

**And**

A justification of the selected development model as a written report

**And**

An analysis that defines the requirements, constraints and scope of a solution in the form of a software requirements specification

**And**

A folio of alternative design ideas and detailed design specifications of the preferred design.

Scope of task

Identification of need or opportunity

In preparation for the SAT students will need to be able to identify a real-world need or opportunity that can be developed as a software solution for a client.

Teachers should have discussions with their students regarding their need or opportunity and to have a process for approving the need or opportunity before students commence their project plan. Students are encouraged to document their ideas in order to convince their teacher that they will be able to develop a software solution.

The evidence of this task is observed through Observation 1.

Preparation of a project plan

Criterion 1 assesses students’ skills in project management. Students will prepare a Gantt chart using software that documents all the stages and the activities of the problem-solving methodology for Unit 3 Outcome 2 and Unit 4 Outcome 1 (both parts of the SAT).

Students will need to document all the relevant tasks, sequencing, time allocations, milestones, dependencies and critical path.

The evidence from this task is observed through Observation 2 and assessed through Criterion 1.

Development model

Criterion 2 assesses students’ skills in the selection and justification of a development model. Students are to document and justify the use of their selected development model approach for developing their software solution. Diagrams representing each of the development models are in the *Advice for teachers*.

The evidence from this task is observed through Observation 3 and assessed through Criterion 2.

Collection of data

Students are required to document data for analysis using appropriate data collection methods. The data collected will contribute to the use of analytical tools and techniques in Criterion 3 and the development of a software requirements specification in Criterion 4. The process of data collection may involve students communicating back-and-forth with their clients.

Students will document evidence of their critical and creative thinking through the identification, clarification and critical analysis of the data collected as part of the Analysis Stage in Criterion 3. Refer to the Skills underpinning the Analysis Stage in the Units 1 to 4: Problem-solving methodology specifications on page 13 of the study design.

The evidence from this task is observed through Observation 4 and assessed as part of Criterion 3.

Development of a software requirements specification

Criterion 3 assesses students’ skills in the use of analytical tools and techniques. Students will document the appropriate features of the selected analytical tools and depict the relationships between the data, users and digital systems. Sample representations of the analytical tools are in the *Advice for teachers*.

Criterion 4 assesses students’ skills in documenting a software requirements specification. Students will document the functional and non-functional requirements, constraints and scope as well as the technical environment and the intended audience of the software solution. An outline of the content required in the software requirements specification is in the *Advice for teachers*.

Students will document evidence of their critical and creative thinking through the identification, clarification and critical analysis of the data collected as part of the Analysis Stage in Criterion 3 and 4. Refer to the Skills underpinning the Analysis Stage in the Units 1 to 4: Problem-solving methodology specifications on page 13 of the study design.

The evidence from this task is observed through Observation 5 and assessed through Criterion 3 and 4.

Design folio

Criterion 5 assesses students’ skills in designing the software solution. Students will generate two or three alternative design ideas, develop evaluation criteria with reference to their design ideas and the efficiency and effectiveness of the software solution and then produce their preferred designs for the software solution. An example of the process for developing detailed designs is in the *Advice for teachers*.

Students will document evidence of their critical and creative thinking through design ideas, solution requirements and justification of preferred designs as part of the Design Stage in Criterion 5. Refer to the Skills underpinning the Solution design activity in the Units 1 to 4: Problem-solving methodology specifications on page 14 of the study design.

The evidence from this task is observed through Observation 6 and assessed through Criterion 5.

Issues identified after marking Unit 3 Outcome 2

At the completion of Unit 3 Outcome 2 students may experience issues that will have a negative effect on the development of their software solution in Unit 4 Outcome 1. Teachers can provide feedback on the quality of the designs, however, the adjustments must be initiated by the student and not directed by the teacher. While students can make changes to their designs they will not be reassessed and their original score will stand.

Unit 4

Software development: development and evaluation

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.

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](https://www.vcaa.vic.edu.au/curriculum/vce/vce-study-designs/appliedcomputing-softwaredevelopment/Pages/index.aspx) 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.

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.

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.

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.

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.

The following rubric is used to assess student achievement on Unit 3 Outcome 2 and Unit 4 Outcome 1.
It should be noted that each piece of evidence in each criterion is not equally weighted.

The criteria identify specific characteristics that are used to judge levels of performance against the outcomes. Performance descriptors describe typical evidence associated with five different levels of performance for a criterion (five levels; 10 marks).

Criteria 1 to 5 relate to Unit 3 Outcome 2.

Criteria 6 to 10 relate to Unit 4 Outcome 1.

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| **VCE Software Development: School-assessed Task 2022** |
| **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 3 Outcome 2****1. Skills in project management.** | * Prepares a Gantt chart using software that documents all stages and activities of the problem-solving methodology for U3 O2 and U4 O1.
 | Insufficient evidence | Prepares a plan using software that documents some of the stages and/or activities of the problem-solving methodology. | Prepares a plan or Gantt chart using software that documents most stages and some activities of the problem-solving methodology for U3 O2 and U4 O1. | Prepares a Gantt chart using software that documents all the stages and some activities of the problem-solving methodology for U3 O2 and U4 O1. | Prepares a Gantt chart using software that documents in detail all the stages and most of the activities of the problem-solving methodology for U3 O2 and U4 O1. | Prepares a Gantt chart using software that comprehensively documents all the stages and activities of the problem-solving methodology for U3 O2 and U4 O1. |
| * Documents all the relevant tasks, sequencing, time allocations, milestones, dependencies and critical path.
 | Identifies a limited number of relevant tasks, sequencing and time allocations. | Identifies some relevant tasks, sequencing and time allocations. | Documents a range of relevant tasks, sequencing, time allocations, milestones and dependencies. | Documents in detail most of the relevant tasks, sequencing, time allocations, milestones, dependencies and the critical path for the project. | Documents comprehensively all relevant tasks, sequencing, time allocations, milestones, dependencies and the critical path for the project. |
|  | 0 ❑ | 1 ❑ 2 ❑ | 3 ❑ 4 ❑ | 5 ❑ 6 ❑ | 7 ❑ 8 ❑ | 9 ❑ 10 ❑ |

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| **VCE Software Development: School-assessed Task 2022** |
| **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 3 Outcome 2****2. Skills in the selection and justification of a development model.** | * Documents the use of the selected development model approach.
 | Insufficient evidence | Lists some features of the selected development model. | Outlines some features of the selected development model. | Documents a range of features of the selected development model. | Documents in detail most of the features of the selected development model. | Documents comprehensively all the features of the selected development model. |
| * Documents the justification of the selected development model approach.
 | Identifies limited justification for the use of the selected development model approach. | Outlines a brief justification for the use of the selected development model approach. | Documents a sound justification for the use of the selected development model approach. | Documents a detailed justification for the use of the selected development model approach. | Documents a comprehensive justification for the use of the selected development model approach. |
|  | 0 ❑ | 1 ❑ 2 ❑ | 3 ❑ 4 ❑ | 5 ❑ 6 ❑ | 7 ❑ 8 ❑ | 9 ❑ 10 ❑ |

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| **VCE Software Development: School-assessed Task 2022** |
| **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 3 Outcome 2****3. Skills in using analytical tools and techniques.** | * Documents data for analysis using appropriate data collection methods.
 | Insufficient evidence | Identifies limited relevant data for analysis using one data collection method. | Outlines some relevant data for analysis using some data collection methods and techniques. | Documents a range of relevant data for analysis using a range of appropriate data collection methods and techniques. | Documents in detail a wide range of relevant data for analysis using a range of appropriate data collection methods and techniques. | Documents a comprehensive set of relevant data for analysis using a wide range of appropriate data collection methods and techniques. |
| * Uses all the appropriate features of the selected analytical tools.
 | Uses limited features of the selected analytical tools. | Uses some of the features of the selected analytical tools. | Uses accurately a range of the features of the selected analytical tools. | Uses accurately most of the features of the selected analytical tools. | Uses accurately all the features of the selected analytical tools. |
| * Depicts all the relationships between data, users and digital systems.
 | Depicts limited relationships between the data, users and digital systems in the analytical tools used. | Depicts some of the relationships between the data, users and digital systems in the analytical tools used. | Depicts a range of the relationships between the data, users and digital systems in the analytical tools used. | Depicts most of the relationships between the data, users and digital systems in all analytical tools used. | Depicts accurately all the relationships between the data, users and digital systems in all analytical tools used. |
| * Documents evidence of critical and creative thinking through the identification, clarification and critical analysis of the data collected.
 | Lists some evidence of critical and creative thinking through the identification of the data collected. | Outlines some evidence of critical and creative thinking through the identification and analysis of the data collected. | Documents evidence of critical and creative thinking through the identification, clarification and analysis of the data collected. | Documents detailed evidence of critical and creative thinking through the identification, clarification and critical analysis of the data collected. | Documents comprehensively evidence of critical and creative thinking through the identification, clarification and critical analysis of the data collected to determine its reliability. |
|  | 0 ❑ | 1 ❑ 2 ❑ | 3 ❑ 4 ❑ | 5 ❑ 6 ❑ | 7 ❑ 8 ❑ | 9 ❑ 10 ❑ |

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| **VCE Software Development: School-assessed Task 2022** |
| **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 3 Outcome 2****4. Skills in documenting a software requirements specification.** | * Documents the functional and non-functional requirements, constraints and scope as part of the SRS.
 | Insufficient evidence | Lists a limited set of solution requirements. | Outlines some appropriate functional requirements and scope. | Documents an appropriate range of functional requirements, constraints and scope. | Documents detailed functional and non-functional requirements, constraints and scope. | Documents comprehensively all functional and non-functional requirements, constraints and scope. |
| * Documents the technical environment and the intended audience of the solution as part of the SRS.
 | Lists some details of the technical environment of the solution or the intended audience. | Outlines some aspects of the technical environment and the intended audience of the solution. | Documents the technical environment and the intended audience of the solution. | Documents in detail the technical environment and the intended audience of the solution. | Documents comprehensively the technical environment and the intended audience of the solution. |
| * Documents evidence of critical and creative thinking through the use of questions and strategies to critically analyse solution requirements.
 | Lists some evidence of critical and creative thinking through the use of questions to identify solution requirements. | Outlines some evidence of critical and creative thinking through the use of questions to analyse solution requirements. | Documents evidence of critical and creative thinking through the use of questions and strategies to analyse solution requirements. | Documents detailed evidence of critical and creative thinking through the use of questions and strategies to critically analyse solution requirements. | Documents comprehensively evidence of critical and creative thinking through the use of effective questions and strategies to critically analyse solution requirements. |
|  | 0 ❑ | 1 ❑ 2 ❑ | 3 ❑ 4 ❑ | 5 ❑ 6 ❑ | 7 ❑ 8 ❑ | 9 ❑ 10 ❑ |

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| **VCE Software Development: School-assessed Task 2022** |
| **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 3 Outcome 2****5. Skills in designing the software solution.** | * Generates alternative design ideas.
 | Insufficient evidence | Generates two design ideas with limited differences in appearance or functionality. | Generates two design ideas with some modifications in appearance and functionality. | Generates two or three design ideas that represent sound alternatives to appearance and functionality. | Generates two or three design ideas that are feasible alternatives and clearly differ in appearance and functionality. | Generates two or three distinctive design ideas that are feasible and original representations of appearance and functionality. |
| * Develops evaluation criteria with reference to design ideas and the efficiency and effectiveness of the software solution.
 | Lists some criteria for evaluating design ideas and some aspects of the software solution. | Outlines some criteria for evaluating design ideas and the efficiency and effectiveness of the software solution. | Develops a range of criteria for evaluating alternative design ideas and the efficiency and effectiveness of the software solution. | Develops a detailed set of criteria for evaluating alternative design ideas and the efficiency and effectiveness of the software solution. | Develops a comprehensive set of criteria for evaluating alternative design ideas and the efficiency and effectiveness of the software solution. |
| * Produces preferred design for the software solution.
 | Produces the preferred design using limited and incomplete methods. | Produces and justifies the preferred design using some appropriate methods and limited reference to the evaluation criteria. | Produces and justifies the preferred design using a range of appropriate methods and design factors with reference to some evaluation criteria. | Produces and justifies the preferred design in detail using appropriate methods and design factors with detailed reference to most evaluation criteria. | Produces and justifies the preferred design comprehensively using appropriate methods and design factors with detailed reference to all evaluation criteria. |
| * Documents evidence of critical and creative thinking through design ideas, solution requirements and justification of preferred designs.
 | Lists some evidence of critical and creative thinking through the development of connections between ideas and solution requirements. | Outlines some evidence of critical and creative thinking through the development of connections between design ideas and solution requirements. | Documents evidence of critical and creative thinking through the development of connections between design ideas and solution requirements and the justification of the preferred designs. | Documents detailed evidence of critical and creative thinking through the connection of ideas, design ideas and solution requirements and the justification of the preferred designs. | Documents comprehensively evidence of critical and creative thinking through the connection of ideas, the generation of design ideas and solution requirements and the justification of preferred designs. |
|  | 0 ❑ | 1 ❑ 2 ❑ | 3 ❑ 4 ❑ | 5 ❑ 6 ❑ | 7 ❑ 8 ❑ | 9 ❑ 10 ❑ |
| **VCE Software Development: School-assessed Task 2022** |
| **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 ❑ |

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| **VCE Software Development: School-assessed Task 2022** |
| **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 ❑ |

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| **VCE Software Development: School-assessed Task 2022** |
| **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 ❑ |

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| **VCE Software Development: School-assessed Task 2022** |
| **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 ❑ |

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| **VCE Software Development: School-assessed Task 2022** |
| **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.
 | Insufficient evidence | Lists some adjustments to the initial project plan. | Outlines some adjustments to the initial project plan during the project. | Documents a range of modifications to the initial project plan during the project using some appropriate techniques. | Documents in detail a range of adjustments to the initial project plan during the project using appropriate techniques. | Documents a comprehensive range of adjustments to the initial project plan during the project using a range of appropriate techniques. |
| * Assesses the effectiveness of the project plan.
 | Lists limited factors that contributed to the effectiveness of the project plan. | Outlines some factors that contributed to the effectiveness of the project plan. | Documents a range of the factors that contributed to the effectiveness of the project plan. | Documents in detail a range of factors that contributed to the effectiveness of the project plan. | 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 ❑ |

Authentication of VCE Applied Computing: Software Development School-assessed Task (SAT)

Teachers are reminded of the need to comply with the authentication requirements specified in the Assessment: School-based Assessment section of the [*VCE and VCAL* *Administrative Handbook 2022*](https://www.vcaa.vic.edu.au/administration/vce-vcal-handbook/Pages/index.aspx)*.* This is important to ensure that ‘undue assistance [is] not … provided to students while undertaking assessment tasks’.

Teachers must be aware of the following requirements for the authentication of VCE Applied Computing: Software Development School-assessed Task.

1. The body of work created for the SAT is based on work developed and completed in Unit 3 Outcome 2 and Unit 4 Outcome 1.

2. Teachers are required to fill out the Authentication record form and provide the student with feedback on their progress at each observation.

3. Undue assistance should not occur at any time during the development of the body of work and teachers need to be vigilant. Students are required to demonstrate development of their thinking and working practices. Teachers are reminded that it is not appropriate to provide ‘detailed advice on, corrections to, or actual reworking of students’ work’.

4. Teachers must sight and monitor the development and documentation of the student’s thinking and working practices throughout the unit to authenticate the work as the student’s own. Students must acknowledge the source of materials and information used to support the development of their work.

5. Students should be encouraged to complete their work at school. Where students use external service providers, their documentation should demonstrate ongoing progress throughout the SAT.

6. During the generation of the software solutions teachers must plan and use observations of student work in order to monitor and record each student’s progress as part of the authentication process. Teachers must ensure that all source and reference material, all use of non-school (home, outsourced) resources and any external assistance (for example, tutors) are acknowledged on the Authentication record form. If a student acknowledges using external resources or receiving external assistance, the teacher should record complete details as an attachment to the Authentication record form.

7. Teachers are reminded that the authentication procedures must be followed for all student work in relation to this SAT. The School-based Assessment Audit includes the inspection of Authentication record forms.

Authentication record form: VCE Applied Computing: Unit 3 Software Development SAT 2022

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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: ……………………………………..………………………………………………….

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| **Component of School-assessed Task** | **Date observed and submitted** | **Teacher comments** | **Teacher’s initials** | **Student’s initials** |
| **Observation 1: Identification of need or opportunity**The student has identified/has documented a real-world need or opportunity that can be solved as a software solution. The teacher has approved or not approved the need or opportunity. | Observed | Observation of need or opportunity |  |  |
| Submitted | Submission of need or opportunity |  |  |
| **Observation 2: Preparation of a project plan** **(Criterion 1)**The student is preparing/has prepared a Gantt chart for both parts of the SAT (Unit 3 Outcome 2 and Unit 4 Outcome 1).  | Observed | Observation of the development of the project plan |  |  |
| Submitted | Submission of project plan |  |  |
| **Observation 3: Development model** **(Criterion 2)**The student has selected and is documenting/has documented the use of an appropriate development model. | Observed | Observation of the documenting of the development model |  |  |
| Submitted | Submission of the development model |  |  |
| **Observation 4: Collection of data** **(Criterion 3)**The student has identified appropriate data and data collection methods for analysis and development of the software requirements specification. | Observed | Observation of the collected data |  |  |
| Submitted | Submission of collected data |  |  |
| **Observation 5: Development of a software requirements specification** **(part of Criterion 3; Criterion 4)**The student is documenting/has documented the analysis in the form of a software requirements specification with the inclusion of analytical tools. | Observed | Observation of the development of the software requirements specification |  |  |
| Submitted | Submission of the software requirements specification |  |  |
| **Observation 6: Design folio** **(Criterion 5)**The student is developing/has developed a folio of design ideas, evaluation criteria and their preferred detailed design. | Observed | Observation of the development of designs |  |  |
| Submitted | Submission of design folio |  |  |

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

Student signature ………………………………………………………………… Date …………………………………

Authentication record form: VCE Applied Computing: Unit 4 Software Development SAT 2022

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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: ……………………………………..…………………………………………………….

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| **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 …………………………………

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| --- | --- | --- |
| **2022** | Victorian Certificate of EducationApplied Computing: Software Development Assessment SheetSchool-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** | Not Shown (0) | Very Low (1–2) | Low (3–4) | Med (5–6) | High (7–8) | Very High (9–10) | **Performance on Criteria: Teacher’s Comments**You may wish to comment on aspects of the student’s work that led to your assessment. |
| **The extent to which the student demonstrates:** |  |  |  |  |  |  |
| 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. |  |  |  |  |  |  |
| 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**