**Phil Feain** - Hello and welcome to this VCE Software Development School-assessed Task on-demand video for the School-assessed Task in 2022. The purpose of Video 3 is to support teachers with understanding Unit 4 Outcome 1, the SAT, Criteria 6-10, authentication and assessment for Software Development. My name is Phil Feain and I'm the Curriculum Manager for Digital Technologies with the VCAA.

This presentation will involve the following topics: The nature of the task, SAT Criteria 6-10, Authentication and Assessment. Now we'll look at the nature of the task for Unit 4 Outcome 1.

Before we discuss the nature of the task we need to look at the outcome statement. The Unit 4 Outcome 1 statement says: develop and evaluate a software solution that meets requirements, evaluate the effectiveness of the development model and assess the effectiveness of the project plan.

The nature of the task for Unit 4 Outcome 1 is stated in the study design and in the administrative information for School-based Assessment. It involves: 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 in monitoring project progress in one of the following: a written report or an annotated visual plan.

The following slides reference the Administrative information for School-based Assessment for Software Development. We will unpack Criteria 6-10 by looking at the scope of the task, each criterion and an approach for completing the task. The first thing students need to do is to develop 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 1-4 and the 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 the 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 for this task is observed through Observation 7 and assessed through Criteria 6 and 7.

This is Criterion 6 which involves skills in using a programming language to develop the software solution. In this criterion students are to: use a range of appropriate processing features, write comprehensive internal documentation, apply appropriate validation techniques and document evidence of critical and creative thinking through the modification of designs and evaluation criteria.

This is Criterion 7 which involves skills in managing data and files, and testing the software solution. In this criterion students are to: organise and manipulate appropriate data structures efficiently, to manage data and files, propose and implement procedures, to manage the security of data and files and document the use of testing techniques and test data. An approach for developing a software solution could involve the following from the Advice for teachers. Student skills should be developed in Unit 3 Outcome 1 to prepare them for Unit 4 Outcome 1.

The programming language selected must meet the Programming requirements document. The 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 and internal documentation of code. Students should also include evidence of critical and creative thinking.

The next thing students need to do is to conduct usability testing. Criterion 8 assesses students' skills in conducting usability testing. Students will document the preparation and conduction of the usability tests. After performing a test 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.

This is Criterion 8 which involves skills in conducting usability testing. In this criterion students are to: Prepare and conduct usability tests, document the results of the usability tests and Document the modifications to the software solution based on the results of the usability testing. An approach for conducting usability testing could involve the following from the Advice for teachers. 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.

The next thing students need to do is to evaluate the software solution and the development model. Criterion 9 assesses the 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 1-4 and the 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.

This is Criterion 9 which involves skills and evaluating the software solution. In this criterion students are to: Propose strategies for evaluating the efficiency and effectiveness of the software solution, Document the evaluation of the efficiency and effectiveness of the software solution in meeting requirements, Document the evaluation of how the development model assisted in the development of the software solution and Document evidence of critical and creative thinking, through the evaluation of the analysis, design and development stages and improvements to the solution.

An approach for evaluating the software solution and development model could involve the following from the Advice for teachers. Students should use their evaluation criteria developed in Unit 3 Outcome 2 when evaluating the efficiency and effectiveness of the 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. An approach for evaluating the software solution and development model could involve the following from the Advice for teachers.

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.

The last thing students need to do is to assess 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. And the evidence from this task is observed through Observation 10 and assessed through Criterion 10.

This is Criterion 10 which involves skills in assessing the project plan. In this criterion students are to: Document the modifications made to the initial project plan throughout the duration of the project and Assess the effectiveness of the project plan. An approach for assessing the project plan could involve the following from the Advice for teachers. 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 desired iterations, annotated draughts of diagrams, annotated code samples, screenshots and feedback from users during usability testing. Just a quick look over authentication as this is covered in more detail in the Background to the SAT video and Authentication video.

Teachers are to fill out these forms during the year. They are to: state the date of the observation and submission, of each of the components of the SAT, comment on the observation and the submission of each of the components and sign their initials for each observation and submission. Students are also required to sign their initials for each observation and submission. At the completion of the unit students are to sign and date the declaration that all resource materials and assistance used have been acknowledged and that all unacknowledged work is their own. The Authentication record form should be updated for each observation and submission during the lifetime of the SAT. It should not be left to the end of the SAT. Authentication record forms can be requested as part of the audit process by the VCAA.

And finally looking at the assessment of the SAT. This is the Assessment Sheet for scores to be added and submitted through VASS. All ten Criteria for the SAT are listed on this page with space provided for each of the scores. The last five scores will be filled in for the SAT in Unit 4 Outcome 1.

In this presentation we looked at: the Nature of the task, discussed SAT Criteria 6-10, looked at Authentication and looked at Assessment. Thank you for following this presentation.

If you have any questions regarding this presentation you can contact Phil Feain, the Digital Technologies Curriculum Manager at the contact details below. Thank you.

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