Software Development Unit 3 – SAT Checklist

What is the SAT?

The SAT is a progressively graded assessment that runs over Terms 2 and 3. The SAT asks you to find a real-world opportunity that needs a software solution. The first step is to find a client you can work with. This can be an individual, a club, or a business. Your client could be a family member (e.g. an aunt or uncle), a friend of the family, another member of the community that you know through work, sport, or recreation activities, or a teacher at your school (but not a Computing teacher!).

You will need to find a real client for your SAT. Before commencing the SAT assessment, your SAT proposal will need to be negotiated and approved by your teacher to ensure that the SAT need or opportunity you choose will enable you to achieve the highest score for each SAT assessment criteria.

There are ten SAT criteria that will be assessed over Unit 3 and Unit 4, five for each Unit. There are three submissions in Unit 3 and four submissions in Unit 4. The SAT makes up 30% of your overall study score.

Your client should be someone who will be happy to commit some of their time to discuss the software requirements, choosing a design, and testing the final software solution. It is important to note that although the SAT requires you to find a real-world client and problem, your solution will not be production ready and is not expected to be deployed.

The client needs to be a real person with a real "need". The client **cannot** be:

- a fellow student
- a friend who is a similar age to you (e.g. first year uni)
- a previous Software Development student, or someone studying computing at university
- a professional programmer
- a computing teacher

Good choices for a client are:

- A relative or close family friend who has a suitable business or hobby
- A coach
- A teacher at your school
- A leader of a community group or organisation

If a student can't find any of the above, a parent might be suitable. Talk to us about it.

Each student is expected to find a client with a unique need, and therefore produce a unique software solution.

If two or more students are attending the same school, each need/solution must be substantially different.

The software solution that you will program for your SAT must exhibit a range of programming skills. We expect that you will have to create a working solution which:

- uses a programming language that supports object orientated programming
- use different programming features in your software solution such as sorting and searching, conditional statements, iterations.
- manipulates the data
- save, retrieve and edit data using a file or database
- presents the data in an easily understood form, possibly a graphical form.

SAT Requirements

The SAT Outcomes for Unit 3 are:

- Analyse and document a need or opportunity
- Justify the use of an appropriate development model
- Formulate a project plan
- Generate alternative design ideas
- Represent the preferred solution design for creating a software solution

Your SAT submissions for Unit 3 covers the Analysis and Design stages of the Problem-Solving Methodology. While in Unit 4 your submissions will cover Development and Evaluation stages of the Problem-Solving Methodology. You cannot afford to do a rough job of any sections of the SAT. Each submission will influence how well you are able to do the following criteria. For example, if you do not create a comprehensive Software Requirements Specification (SRS), you will not be able to justify your designs or the solution that you create, and this may reduce your score for those sections.

Where to find more information

The **Applied Computing Study Design** contains a summary of the SAT tasks on page 46, and the key knowledge and skills are listed under Unit 3 Outcome 2 and Unit 4 Outcome 1.

The **SAT Administrative Information**, which is available from the VCAA website, contains the nature of task and scope of task for each criterion of the SAT, as well as the marking rubric on how each assessment criteria will be assessed. This document will be broken down and explained as we progress through the course.

It is important that students are familiar with the SAT Administrative Information. While students are working on each of the SAT submissions, they need to be checking the task details and the indicators of levels of performance for the relevant criteria to ensure that their submission contains everything it should, especially if they are aiming for a high study score.

It is also crucial that students make frequent back-ups of their SAT project.

Submission Dates:

Due at the end of week	Description	Criterion	Marks
5	SAT Project Proposal		-
8	SAT Project Plan & Justification of Development Model	1 & 2	20
10	SAT Data Collection & SRS	3 & 4	20
14	SAT Design Folio & Evaluation Criteria	5	10

SAT Unit 3 Checklist
Project Proposal

Before beginning the SAT, you need to:
- ☐ Find a client with a need or opportunity
- ☐ Interview client to establish the need or opportunity and requirements.
- ☐ If unsure regarding the suitability of the client's need or opportunity, contact your teacher for further discussion.
- ☐ Complete and submit SAT Project Proposal Checklist
- ☐ Organise an online meeting with your teacher to discuss the suitability of your proposal. (Make sure WebEx, Microphone and Webcam are functioning correctly)

Criteria 1: Project Plan

For this part of the SAT, you need to submit:
- ☐ A Gantt Chart

Things to consider:
- You need to consider both Unit 3 and 4 tasks, to the best of your knowledge, and consider the following to include in the Gantt Chart
  - ☐ PSM stages
  - ☐ PSM activities for each stage
  - ☐ The project start date
  - ☐ The project end date
  - ☐ Tasks
  - ☐ Sequence of tasks
  - ☐ Dependencies between tasks
  - ☐ A start and end date for every task
  - ☐ The duration (length) of every task
  - ☐ Milestones
  - ☐ Critical Path

Criteria 2: Justification of Development Model

For this part of the SAT, you need to submit:
- ☐ Justification of Development Model report

    Development Models to choose from:
    - Waterfall
    - Agile
    - Spiral

    Things to consider in your report:
    - ☐ Documenting comprehensively all the features of the selected development model.
    - ☐ Documenting a comprehensive justification for the use of the selected development model approach.

Criteria 3 & 4: Data Collection and SRS

For this part of the SAT, you need to submit:

- ☐ A Software Requirements Specification (SRS)
    - ☐ Purpose of the SRS
    - ☐ Intended audience characteristics (end users)
    - ☐ Technical environment characteristics (operating environment)
    - ☐ Scope of the solution
    - ☐ Constraints
    - ☐ Functional Requirements
    - ☐ Non-Functional Requirements
    - ☐ Use Case Diagrams
    - ☐ Context Diagrams
    - ☐ Data Flow Diagrams
- ☐ Discussion of appropriate methods for collecting and analysing data; and
  Evidence of data collection (e.g. interview and survey questions and responses, notes from observations)
- ☐ Evidence of critical and creative thinking through the identification, clarification and critical analysis of the data collected (written submission)
- ☐ Evidence of critical and creative thinking through use of questions and strategies to critically analyse solution requirements (written submission)

Criteria 5: Design Folio

For this part of the SAT, you need to submit a Design Portfolio which includes the following:

- ☐ Two or three alternative designs as simple mock-ups
- ☐ The preferred design with a detailed mock-up that *includes:*
  - o Annotations
  - o Pseudocode
  - o Data dictionary
  - o Object Descriptions
- ☐ Evaluation Criteria for the designs
- ☐ Evaluation of the alternative designs using your Evaluation Criteria and client feedback
- ☐ Evaluation Criteria for evaluating the effectiveness and efficiency of the software solution (based on the functional and non-functional requirements)
- ☐ Evidence of critical and creative thinking through design ideas, solution requirements and justification of preferred designs (written submission)