# Project Assessment: Validate and test software

## Criteria

### Unit code, name and release number

ICTPRG529 - Apply testing techniques for software development

ICTPRG520 - Validate an application design against specifications

### Qualification/Course code, name and release number

ICT50718 - Diploma of Software Development (1)

## Student details

### Student number

### Student name

## Assessment Declaration

* This assessment is my original work and no part of it has been copied from any other source except where due acknowledgement is made.
* No part of this assessment has been written for me by any other person except where such collaboration has been authorised by the assessor concerned.
* I understand that plagiarism is the presentation of the work, idea or creation of another person as though it is your own. Plagiarism occurs when the origin of the material used is not appropriately cited. No part of this assessment is plagiarised.

### Student signature and Date

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## Assessment instructions

Table 1 Assessment instructions

| Assessment details | Instructions |
| --- | --- |
| **Assessment overview** | The objective of this assessment is to assess your skills and knowledge required to develop test strategies, validate and implement tests to assure the reliability and quality of an application. |
| **Assessment Event number** | 3 of 4 |
| **Instructions for this assessment** | This is a project-based assessment and will be assessing you on your knowledge and performance of the unit.  This assessment is in four parts:   * Prepare test document and data * Perform tests * Document and manage test results * Maintain and submit test ware   The assessment also contains:   * Assessment Checklist * Assessment Feedback.   **Check the Assessment checklist to ensure that you’ve covered all the required tasks.** |
| **Submission instructions** | On completion of this assessment, you are required to upload it or hand it to your assessor for marking.  Ensure you have written your name at the bottom of each page of your assessment.  Submit the following documents for each part:   * Part 1: Prepare test document and data   + TestPlan\_Part1 * Part 2: Perform tests   + TestPlan\_Part2 * Part 3: Document and manage test results   + TestPlan\_Part3 * Part 4: Maintain and submit test ware   + Test plan document   + Test suite / script   It is important that you keep a copy of all electronic and hardcopy assessments submitted to TAFE and complete the assessment declaration when submitting the assessment. |
| **What do I need to do to achieve a satisfactory result?** | To achieve a satisfactory result for this assessment all questions must be answered correctly and all items in the Assessment Checklist must be marked Satisfactory. |
| **Assessment conditions** | Skills must be demonstrated in a workplace or simulated environment where conditions are typical of those in an ICT working environment or workplace. |
| **What do I need to provide?** | * USB drive or other storage method with enough free space to save work to.   To complete this assessment off campus, you will need:   * A personal computer with internet access * A word-processing software e.g. MS Word, OpenOffice Writer * Access to Integrated Development Environment (IDE) * Access to testing tools * Application in development |
| **What will the assessor provide?** | * Access to the Learning Management System * Test document as outlined in assessment:   + Test Plan Document.docx |
| **Due date and time allowed** | Indicative time to complete assessment:   * Two weeks |
| **Assessment location** | All parts may be completed outside of the classroom. |
| **Supervision** | All parts are unsupervised take-home assessment. Your assessor may ask for additional evidence to verify the authenticity of your submission and confirm that the assessment task was completed by you. |
| **Reasonable adjustment** | If you have a permanent or temporary condition that may prevent you from successfully completing the assessment event(s) in the way described, you should talk to your assessor about ‘reasonable adjustment’. This is the adjustment of the way you are assessed to take into account your condition, which must be approved BEFORE you attempt the assessment. |
| **Assessment feedback, review or appeals** | Appeals are addressed in accordance with [Every Student’s Guide to Assessment in TAFE NSW.](https://www.tafensw.edu.au/documents/60140/76288/Every+Students+Guide+to+Assessment+in+TAFE+NSW.pdf/cc2b5417-89a6-08f7-9a67-a0c2ff1e26ee) |

## Case Study

### Scenario

#### Background

One of the clubs in Sydney has contracted you to develop a simple membership system. Currently the club has recorded their members’ details in a book but would like to start storing and managing the details electronically.

The system should allow club employees to add new members to the system, update their details, cancel their membership, and display all members’ details. The following details must be captured when adding a new member to the system:

* name (first and last)
* Email
* phone number
* date of birth

In the future, the club would like to allow their guests to sign-up and manage their membership online via the club’s website AND via a mobile app.

## Part 1: Prepare test document and data

Review and analyse the software requirements in the case study. Based on your review and analysis, complete the following tasks, and record the information in a word-processed document. Use specialised and technical language, diagrams, and pictures where appropriate.

1. Select one completed use case in your application.
2. Perform research to find at least two (2) suitable tests to verify the completeness, reliability, and performance of the completed use case.
3. Based on your research, determine the following:
   * Test context and scope
   * Test standard and methodology
   * Test tools and types
   * Test design techniques
4. Design test cases using:
   * static test design technique
   * dynamic test design technique
   * appropriate test input data determined from the requirements
   * appropriate formatting including test case number, description, preconditions, steps, expected result, and tool name (if applicable).
5. Save your word-processed document as **TestPlan\_Part1**

## Part 2: Perform tests

Your next step is to execute tests using tools. In this step, you will build and run tests to verify the completeness, reliability, and performance of the completed use case (from Part 1). Complete the following tasks and record the information in a word-processed document.

Tasks:

* Perform research to find test environment requirements and automated tools to build tests (determined in Part 1).
* Review and analyse research documents found.
* Review and validate the test plan and test cases.
* Record your validation details (date, name, and procedures) and results.
* Determine, build and setup the test environment and input data.
* Create and execute test suite or script.

Ensure that you include the following in your document:

1. Test environment requirements for each test case.
2. At least two (2) automated testing tools and their functions.
3. URLs of research documents.
4. Testing steps and screenshots of:
   * Test environment setup
   * Test suite or script including input data
   * Use of testing tools to execute test cases
   * Test record to store result
5. Save the word-processed document as **TestPlan\_Part2**.

## Part 3: Document and manage test results

In this step, you will evaluate test results (from Part2) and perform debugging. You are required to use the test suite or script (from Part2) to re-test the application once the defect has been fixed. Complete the following tasks and record the information in a word-processed document.

Tasks:

* Evaluate test results to identify defect.
* Track the defect and verify fixes.

Ensure that you include the following in your document:

1. Details of defect found.
2. Debugging steps to track the defect.
3. Details of fixes implemented.
4. Test results after debugging.
5. Save the word-processed document as **TestPlan\_Part3**.

## Part 4: Maintain and submit test ware

Once you have performed all required tests, you need to compile the test procedures and results into the Test Plan document. Complete the missing sections in the given Test Plan document.

1. Open and modify the Test Plan document as follows:
   1. Copy your answers saved in the **ICTPRG529\_Part1** document into section 1 to 2.
   2. Copy your answers saved in the **ICTPRG529\_Part2** document into section 3 to 5.
   3. Copy your answers saved in the **ICTPRG529\_Part3** document into section 6. Add more rows into section 5 table to include test results after debugging.
   4. Complete the missing information in section 7.
2. Save the completed Test Plan document as **TPD\_YourName**.
3. Submit the completed test ware (documents and suite/script) to your teacher/assessor for storage and maintenance.

## Assessment Checklist

The following checklist will be used by your assessor to mark your performance against the assessment criteria of your submitted project. Use this checklist to understand what skills and/or knowledge you need to demonstrate in your submission. All the criteria described in the Assessment Checklist must be met. The assessor may ask questions while the submission is taking place or if appropriate directly after the task/activity has been submitted.

Table : Assessment Checklist

| TASK/STEP # | Instructions | S | U/S | Assessor Comments |
| --- | --- | --- | --- | --- |
| **Part 1.2** | Includes at least two (2) tests |  |  | *Assessors are to record their comments in sufficient detail to demonstrate their judgement of the student’s performance against the criteria.* |
| **Part 1.3** | Determines the following for the two (s) selected tests:  • Test context and scope  • Test standard and methodology  • Test tools and types  • Test design techniques |  |  |  |
| **Part 1.4** | Designs test cases using appropriate techniques, data and formatting |  |  |  |
| **Part 1.5** | Document saved as **TestPlan\_Part1** |  |  |  |
| **Part 2.1** | Includes test environment requirements for each test case |  |  |  |
| **Part 2.2** | Includes at least two (2) automated testing tools and their functions |  |  |  |
| **Part 2.3** | Includes URLs of research documents |  |  |  |
| **Part 2.4** | Includes testing steps and screenshots of:  • Test environment setup  • Test suite or script including input data  • Use of testing tools to execute test cases  • Test record to store result |  |  |  |
| **Part 2.5** | Document saved as **TestPlan\_Part2** |  |  |  |
| **Part 3.1** | Includes details of defect |  |  |  |
| **Part 3.2** | Includes debugging steps |  |  |  |
| **Part 3.3** | Includes details of fixes |  |  |  |
| **Part 3.4** | Includes test results after debugging |  |  |  |
| **Part 3.5** | Document saved as **TestPlan\_Part3** |  |  |  |
| **Part 4.2** | Completed document saved as **TPD\_YourName** |  |  |  |
| **Part 4.3** | Obtains sign-off |  |  |  |

## Assessment Feedback

### Assessment outcome

Satisfactory

Unsatisfactory

### Assessor Feedback

Has the Assessment Declaration been signed and dated by the student?

Are you assured that the evidence presented for assessment is the student’s own work?

Was the assessment event successfully completed?

If no, was the resubmission/re-assessment successfully completed?

Was reasonable adjustment in place for this assessment event?  
*If yes, ensure it is detailed on the assessment document.*

Comments:

### Assessor name, signature and date:

### Student acknowledgement of assessment outcome

Would you like to make any comments about this assessment?

### Student name, signature and date

***NOTE: Make sure you have written your name at the bottom of each page of your submission before attaching the cover sheet and submitting to your assessor for marking***