1. Tests and Results

1.1 Authentication

Test Case	Test Description	Expected Results	Pass/ Fail
1	**[Failed Login]** A. Invalid NRIC B. Incorrect Password	Login fails, and the user is prompted to re-enter their credentials.	Pass
2	**[Successful Login]** Valid NRIC and correct password	Login is successful, and the user is shown the main menu based on their role.	Pass
3	**[Change Password]** A. User enters the wrong old password B. User enters the correct old password, but the new password does not match C. User enters the correct old password, and the new password matches	A and B → Displays an error and returns the user to the main menu. C → Password is successfully updated.	Pass

1.2 Applicant Functions

Test Case	Test Description	Expected Results	Pass/ Fail
1	**[View Available Projects]** Filter options are displayed	The filter menu is shown. Applicants can filter projects by location, flat type, or price range. Only projects with visibility turned "on" and eligible to the applicant's group (single/married) are listed.	Pass
2	**[View My Applications]** A. Applicant has applied for a project B. Applicant has not applied for a project	A → Displays a list of all previously applied projects, regardless of current visibility status. B → Displays "No applications found."	Pass
3	**[Submit Project Application]** A. Applicant has no existing application B. Applicant has an existing application	A → Eligible and visible projects are listed, and the applicant is prompted to select one. B → Displays "ERROR: You have an existing BTO application. Please try again later."	Pass
4	**[Withdraw Application]** A. Applicant has a pending application B. Applicant has no pending application	A → Lists all active (pending/successful) applications and prompts for withdrawal selection. B → Displays "No active applications available to withdraw"	Pass
5	**[View My Enquiries]** A. Applicant has created enquiries B. Applicant has no enquiries	A → Displays a list of enquiries submitted and their responses (if any). B → Displays "No enquiries available"	Pass

6	**Manage Enquiry** A. Create a new enquiry B. Edit an existing enquiry C. Delete an enquiry	A → Enquiry is created successfully. B → Enquiry is updated successfully. C → Enquiry is deleted successfully.	Pass

1.3 Officer Functions

Test Case	Test Description	Expected Results	Pass/ Fail
1	**[Applicant Functions]**	Refer to 4.2 Applicant Functions	Pass
2	**[Register to Handle Project]** A. Officer selects a project B. Officer selects a project that they are currently handling C. Officer selects a project they had already applied for	A → Displays "You have successfully registered to handle project: (name of the project)! Please wait for approval." B → Displays "ERROR: You have an existing registration for this project." C → Displays "ERROR: You have an existing BTO application for this project."	Pass
3	**[Check Registration Status]** A. Officer has registered for one or more projects B. Officer has not registered for any project	A → Displays the name of the project(s) that the officer is currently in charge of B → Display the officer menu	Pass
4	**[View Handled Projects]** A. Officer is assigned to one or more project B. Officer is not assigned to any project	A → Displays a list of projects that the officer is currently handling, officer is prompted to select a project to view more details B → Displays "ERROR: You do not have any projects assigned to you."	Pass
5	**[Manage Applications]** A. If application status is "Booked" or "Withdrawn" B. If application status is "Pending"	A → Display the project details B → Prompts officer to either approve, reject, or go back to the menu	Pass
6	**[Manage Successful Applications]** A. If current project has approved applications B. If current project has no approved applications	A → Officer is prompted to change the project status from "Approved" to "Booked" B → Displays "No successful applications available to book for this project."	Pass
7	**[View Enquiries]**	Display a list of enquiries and prompts to select an enquiry to respond to	Pass

1.4 Manager Functions

Test Case	Test Description	Expected Results	Pass/ Fail
1	**[View All Projects]**	Display the list of all projects	Pass
2	**[View All Handled Projects]**	Displays a list of projects that the current manager is in charge of.	Pass
3	**[Manage Officer Registrations]**	Displays a list of projects for which officers have registered, and prompts the manager to select a project to approve or reject each registration.	Pass
4	**[Manage Applicant Applications]**	Displays a list of projects for which officers have registered, and prompts the manager to select a project to approve or reject each application	Pass
5	**[Manage Project Details]**	Displays a list of projects for which officers have registered, and prompts the manager to select a project detail (e.g. name, location, etc) to edit	Pass
6	**[View Enquiries]**	Refer to 4.3 Officer Functions, test case 7	Pass
7	**[Generate Applicant Report]**	Generates a report of the project's applications based on what the manager selects (Flat Type, Marriage Status, etc)	Pass
7	**[View All Enquiries]**	Display a list of enquiries from every project, regardless of manager status and prompts to select an enquiry to respond to	Pass
8	**Manage Project [Create/Edit/Delete Project]**	Prompts the manager to create a new project by filling in details such as name, location, flat types, officer slots, application close/opening date etc.	Pass

1.5 Additional Functions

Test Case	Test Description	Expected Results	Pass/ Fail
1	**[Error Handling for Invalid Inputs]** When the user is prompted to select an option from the menu, but enters a number that is not listed	Displays an error message and prompts the user to enter a valid option within the menu range.	Pass
2	**[Password Hashing]**	All user passwords are hashed using the SHA-256 algorithm before it is stored in a CSV file.	Pass
3	**[Report Export to CSV]**	Managers can export their applicant applications report as a CSV file for easy sharing	Pass