

ENG1 Software Testing

Cohort 3 - Group 28

“Team 28”

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Summary

Software testing is an essential part of any software engineering project, but the circumstances of creating a game force a certain approach. All tests need to be based on the requirements. At minimum every requirement listed “shall” must be tested for, ideally the tests cover every single requirement. Unit testing is a highly effective method of testing code functionality due to its speed and objectivity. In games, the high degree of interactivity limits how much can be tested with Unit Tests. A manual test plan must fill in the gaps, which must have specific inputs and expected outputs to ensure reliability. If a unit or manual test fails, we must alter the tested code to ensure adherence to the requirements the tests are based on.

The correspondence between tests and requirements can be found on a table on the website.

Test

Unit Tests

AssetsTests exists to check for image and sound files that are essential for users to understand the game environment. The assets act as affordances that help user navigate the User Interface, so their existence is essential. These tests are primarily for future proofing, in case assets are replaced these tests make sure that the files that use the assets actually have the correct path.

PersistenceTest simply checks for the persistent data used to store high scores.

PlayerTests has one test to ensure the position can be changed. The other tests ensure that interactable objects have the expected bounds.

LeaderboardsTest tests the functionality of the leaderboard, testing whether it can successfully be reset and written to, and whether it can ensure the scores are presented in order. The last test makes sure that scores that would rank 11th are not saved to the leaderboard.

All the above tests completely succeeded. In total 21 tests were ran and 21 tests passed. Screenshots showing the units tests being passed can be found in a zip file on our website.

Manual Tests

Test ID	What the Test Data is	Where the Test Data will be used	What the expected result is	What the purpose of the test is
1	Clicking the interact button after approaching the dock	Main Game	Duck feeding shall engage, fun will increment, time shall increment	UR_INTERACT UR_RECREATE UR_TIME_SKIP
2	Clicking the interact button after approaching the sport building	Main Game	Sport recreation shall engage, fun will go up, time shall increment	UR_INTERACT UR_RECREATE UR_TIME_SKIP
3	Clicking the eat button after approaching the piazza building	Main Game	Feeding shall engage, food will increment, time shall increment	UR_INTERACT UR_EAT
4	Clicking the study button after approaching the piazza building	Main Game	Studying shall engage, study shall increment, time shall increment	UR_INTERACT UR_STUDY UR_STUDY_GAME UR_TIME_SKIP
5	Clicking the study button after approaching the compsci building	Main Game	Studying shall engage, study shall increment, time shall increment	UR_INTERACT UR_STUDY UR_STUDY_GAME UR_TIME_SKIP
6	Holding up	Main Game	Character moves up	UR_MOVEMENT
7	Holding left	Main Game	Character moves left	UR_MOVEMENT
8	Holding down	Main Game	Character moves down	UR_MOVEMENT
9	Holding right	Main Game	Character moves right	UR_MOVEMENT
10	Clicking the sleep early button after approaching the Goodricke building between 20:00 and 23:00	Main Game	Sleep engaged, next day progressed	UR_INTERACT UR_SLEEP UR_TIME_SKIP

11	23.00	Walk around	Main Game	Map is made visible	UR_MOVEMENT UR_MAP_DESIGN UR_CAMPUS_BUILDINGS
12		Wait for name entry screen	Main Game	Name entry screen appears	UR_USERNAME UR_GAME_LENGTH
13		Enter name into leaderboard	Name entry screen	Leaderboard accepts the name	UR_LEADERBOARD UR_USERNAME
14		Every day walk to nisa and perform recreation, then view results screen after entering name	Leaderboard screen	Bonus points are scored	UR_STREAKS
15		Every day walk to piazza and perform eating, then view results screen after entering name	Leaderboard screen	Bonus points are scored	UR_STREAKS

16	1	Every day walk to campus and perform studying, then view results screen after entering name	Bonus points are scored	Yes	No	TEST16-SUCC.mp4
17	1	Input the correct number codes during the study game	Success message displayed	Yes	No	TEST17-SUCC.mp4
18	1	Input the incorrect number code during the study game	Failure message displayed	Yes	No	TEST18-SUCC.mp4
19	1	Play for 5-6 minutes	The game will end	No	Error reported to team, glitch that prevented week from ending if day 7 ends at Goodricke	TEST19-FAIL1.mp3
19	2	Play for 5-6 minutes	The game will end	Yes	No	TEST19-SUCC.mp3
20	1	Clicking the steal button after approaching Nisa	Time will pass and the fun meter will go increment	Yes	No	TEST20-SUCC.mp4
21	1	Achieve a high score, then go to the leaderboard screen to see your name at the top	The name and score will appear	Yes	No	TEST21-SUCC.mp4
22	1	Clicking the sleep early button after approaching the Goodricke building between 20:00 and 23:00	Sleep engaged, next day progressed	Yes	No	TEST22-SUCC.mp4
23	1	Enter nothing into the name entry screen	Leaderboard rejects and requests re-entry	Yes	no	TEST23-SUCC.mp4
24	1	Get a score of 0	The end screen says I did not pass.	Yes	No	TEST24-SUCC.mp4
25	1	Get a score below 40	The end screen says I did not pass.	Yes	No	TEST25-SUCC.mp4
26	1	Get a score above 40	The end screen says I did pass	Yes	No	TEST26-SUCC.mp4

The above table describes every manual test, including the inputs, where the inputs would be performed, the expected results and what requirements they address. It should be noted that all but test 19 had unusual game speeds applied to reduce the time spent on each test. We believe there is little room for that alteration to corrupt the results.

Out of all the tests, only 15 and 19 had failures. These failures were patched and the subsequent tests succeeded. In total out of 26 manual tests, 24 succeeded on first run, 2 succeeded on second run. The testing table and relevant videos can be found on our website.

UR_BACKSTORY and UR_TIME_SKIP_ANIMATION are untested due to their low priority. UR_TIME_SCALE isn't tested because it conflicts with UR_TIME_SKIP and UR_GAME_LENGTH, and therefore was not implemented.

Links

All aforementioned resources can be found at <https://team28.tech/#Test2>

- <https://team28.tech/test/> (report output)
- <https://team28.tech/extra/ManualTestTable.pdf>
- <https://team28.tech/extra/Requirements-To-Tests%20Table.pdf>
- <https://www.youtube.com/watch?v=8wfPOAMYI-s> (manual test video)