**Project:** Testing Documentation for Teesside Lottery Game

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This document details the testing process for the Teesside Lottery game, developed using Pygame. My aim is to ensure all features function correctly, to log every bug encountered during development whether fixed or still unresolved and to provide a clear record of my testing efforts. This includes test scenarios, their results, and bug tracking log.

The testing covers all key aspects of the game, including:

* Start Screen: Display and navigation.
* Selection Screen: Number selection, lucky dip, reset, favourites management, and lottery draw initiation.
* Favourites Screen: Viewing, editing, and deleting favourite number sets.
* Rules Screen: Proper display of game rules.
* Lottery Draw: Cost deduction, number generation, match calculation, prize awarding, and pot updates.
* Results Screen: Accurate presentation of draw outcomes.
* File Handling: Saving and loading game history and favourites.
* Navigation: Seamless transitions between screens.

This documentation captures all errors I’ve encountered since starting development, offering a full picture of the game’s progress and current state.

**Test Environment:**

 **Operating System**: Windows 10

 **Python Version**: Python 3.12

 **IDE**: Visual Studio Code

 **Pygame Version**: 2.6.1

 **Hardware**: Laptop

**Test Scenarios**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Test Scenario** | **Description** | **Expected Result** | **Actual Result** | **Status** | **Comments** |
| **Test 1** | Start screen displays correctly | Title, jackpot, last draws, pot, and buttons are visible | As expected | Pass | Everything looks good here; I’m pleased with the layout. |
| **Test 2** | Click "Play" button on start screen | Navigates to selection screen | As expected | Pass | Navigation works smoothly |
| **Test 3** | Select 6 numbers on selection screen | Numbers are highlighted, "Draw" button appears | As expected | Pass | I’m happy with how the selection highlights and triggers the button. |
| **Test 4** | Click "Lucky Dip" on selection screen | 6 random numbers are selected, "Draw" button appears | As expected | Pass | The random selection works |
| **Test 5** | Click "Reset" on selection screen | All selected numbers are cleared | As expected | Pass |  |
| **Test 6** | Save a new favourite set | Favourite is added to the list and saved to file | As expected | Pass | Saving works |
| **Test 7** | Update an existing favourite set | Favourite is updated in the list and file | As expected | Pass |  |
| **Test 8** | Delete a favourite set | Favourite is removed from the list and file | As expected, but no confirmation prompt | Pass |  |
| **Test 9** | View rules screen | Rules are displayed correctly with text wrapping | As expected | Pass |  |
| **Test 10** | Perform a lottery draw with sufficient pot | Pot decreases by £10, draw occurs, results shown | As expected | Pass |  |
| **Test 11** | Perform a lottery draw with insufficient pot | Message "Not enough money!" shown, draw does not occur | Message shown briefly, but player might miss it | Fail | I need to make the message stay longer or disable the draw button when pot < £10. |
| **Test 12** | Check history displays last 5 draws | Only the last 5 draws are shown on start screen | As expected | Pass | History tracking is accurate |
| **Test 13** | Load favourites with invalid data in favs.txt | Game handles invalid data gracefully without crashing | Game crashes with ValueError | Fail | I must add validation to handle or skip invalid lines in favs.txt properly. |

**Bug Tracking**

This section lists all bugs I’ve identified during development and testing. It includes both resolved and unresolved issues.

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Bug ID** | **Description** | **Severity** | **Status** | **Resolution** |
| **B001** | Numbers could be selected multiple times | High | Fixed | Added check to prevent duplicates in u\_nums |
| **B002** | "Draw" button clickable with fewer than 6 numbers | High | Fixed | Only show "Draw" button when 6 numbers selected |
| **B003** | Favourites not saved correctly (overwritten instead of appended) | Medium | Fixed | Corrected save\_favs to append properly |
| **B004** | Pot not updated correctly after winning | High | Fixed | Ensured prize is added to pot after draw |
| **B005** | Game crashes if favs.txt contains invalid data | High | Open | N/A |
| **B006** | No confirmation prompt when deleting a favourite | Medium | Open | N/A |
| **B007** | Message timer is frame-based, inconsistent timing | Low | Open | N/A |
| **B008** | Insufficient pot message is not persistent enough | Low | Open | N/A |
| **B009** | Game crashes unexpectedly after playing over 350 times | High | Open | N/A |
| **B010** | Cannot edit individual numbers in favourite sets | Medium | Open | N/A |

**Fixed Bugs**

These are issues I’ve already sorted out:

* **B001**: I noticed players could pick the same number repeatedly, which wasn’t right. I added a check to ensure each number is unique.
* **B002**: The "Draw" button was clickable with fewer than 6 numbers, causing errors. I made it appear only when 6 numbers are selected.
* **B003**: Favourites were being overwritten instead of added to the list. I fixed the save function to append them correctly.
* **B004**: After a win, the pot wasn’t increasing properly. I adjusted the code to update the pot with the prize amount.

**Current Bugs**

These are the issues I still need to tackle:

* **B005**: If favs.txt has invalid data (like letters instead of numbers), the game crashes. I need to add error handling to manage this gracefully.
* **B006**: There’s no confirmation when deleting a favourite, which could lead to mistakes. I should include a dialogue box for safety.
* **B007**: Messages disappear based on frames, not time, so the duration varies. I ought to switch to a time-based system.
* **B008**: The "Not enough money!" message flashes too quickly when the pot’s low. I need to make it more noticeable or disable the draw button.
* **B009**: After playing over 350 times, the game crashes unexpectedly—possibly a memory issue. I should investigate resource usage and maybe add a restart option.
* **B010**: When editing favourites, I have to reset all numbers instead of changing them one by one. I need to improve this to allow individual edits.

**Conclusion**

My testing shows that the Teesside Lottery game’s main features—like navigation, number picking, and draws work well overall.