Usability Testing Report for Java Tower Defense Game

Project: Java Tower Defense

Test Type: Usability Test

Version Tested: GitHub repo https://github.com/callumdmay/java-tower-defense

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Participants: 6 users (3 novice, 3 experienced with Tower Defense games)

1. Executive Summary

This usability test was conducted to evaluate how intuitively players could navigate and play the Java Tower Defense game. We focused on six key interaction tasks and observed participants' behavior, confusion points, and success rates. The majority of participants were able to perform core tasks but struggled with locating tower upgrades and interpreting the enemy attributes.

2. Summary of Key Findings

Test Task	Success Rate	Avg Time	Notable Issues	Suggested Fixes
Start Game	100%	3s	None	-
Place Tower	100%	10s	2 users confused about placement feedback	Add placement highlight/ghost tower
Upgrade Tower	0%	-	4 users didn't notice upgrade UI	Add highlight or interaction to towers
Enemy Info	50%	-	Stats unclear or hard to locate	Add tooltip or info panel
End Game Interpretation	100%	4s	One user didn't know how to restart	Add restart button to game over screen
exit	83%	9s	1 user didn't find exit button	Highlight exit button
Map Editing	50%	10s	Half of users	Add prompt

| confused about map editing | instruction in map editing Screen |

3. Participant Behavior Overview

- Novice Users had the most trouble understanding enemy properties and tower upgrade mechanisms.

- Experienced Users were confused only by the lack of visual guidance for upgrades.

- Most players quickly grasped how to place towers and start waves.

4. Observations and Screenshots

Start Menu Observation
All users easily found the Play button.
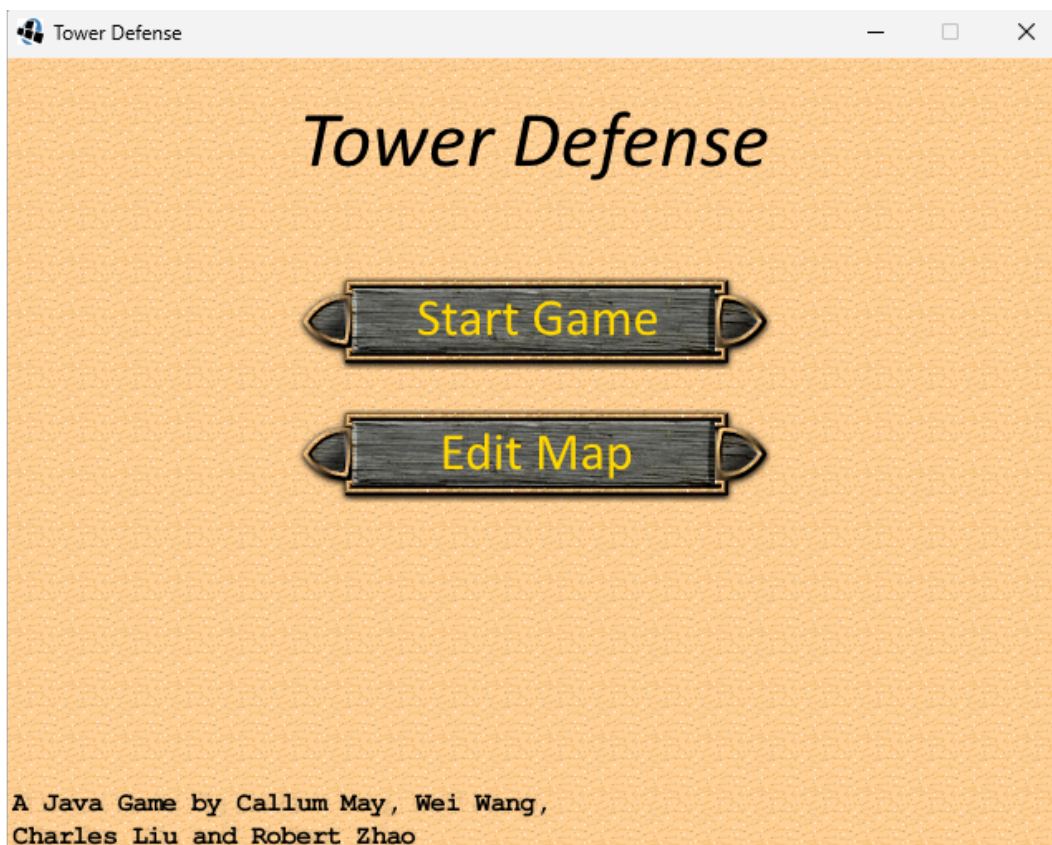
Tower Placement Observation
Users understood drag/click placement, but no feedback when placement failed.

Tower Upgrade Observation

Only 2 out of 6 users upgraded successfully.

Enemy Info Access

The game lacks detailed description of towers.

Game Over Handling

All users understood the result, but 1 didn't know how to restart.

5. Recommendations

Add UI guidance for tower upgrades (flash or outline when hovered)

Enhance enemy visibility: Include HP bars or info panel

Make restart button prominent on Game Over screen

Clarify pause/settings icon with a gear symbol

6. User Quotes

> "I didn't realize I could upgrade my tower until the test was almost over."

> "I kept placing the tower but didn't know it failed — maybe show a red cross if invalid."

> "Game was fun once I got going, but I missed the enemy info the first few waves."

7. Conclusion

This usability testing session revealed that while the core gameplay is solid and accessible, clarity in UI feedback and upgrade interactions is essential for smoother onboarding. Implementing the suggested fixes would significantly improve user experience.