Project Valence

Code and User Testing Plans and Results

April 5th, 2024

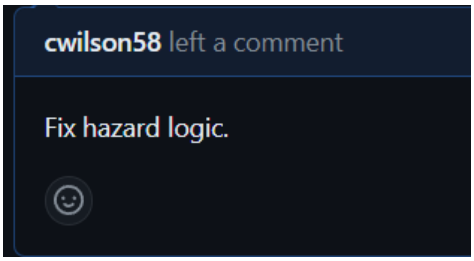
Nicolas Ansell, Julian Gonzales, Michael Osachoff, Cameron Wilson

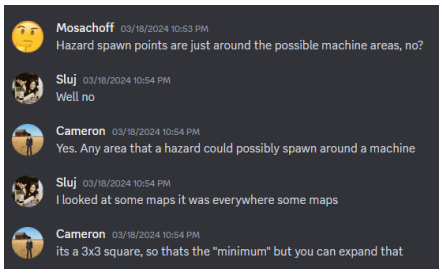
Code Testing Plan

Code testing for Project Valence was done by the developers in a very loose manner and involved running through a typical gameplay loop while reviewing a pull request. The typical script for a pull request on a single player feature involved starting a single player game, playing the normal game state, and completing one or more days. Following this, known bugs were assessed including wall collisions, contract values overflowing, making invalid recipes, etc. The testing plan for developers closely matched the one for users, with the additional requirement of working with experimental data or using debug edits to confirm states worked. The script was only completed following a code review, and any changes that resulted from the testing was put into the review comments with changes requested.

Code Testing Results

An example of a failed testing result from the plan is when Julian created a large new map after the implementation of the water and fire hazards. Comments were left in two places, one in the actual repository and then a conversation that was occurring during the review in the discord.





As of release version 0.0.4, our current bug backlog caught by this method of testing includes a lack of controller friendly user interface in the post play screen, display of increases is done incorrectly, as it shows the number after the increase plus the increase, and hazard interaction areas can be difficult to use in small spaces.

User Testing Plan

Project Valence User Testing Plan included one phase per release of Project Valence. The initial phase we collected as many users as possible regardless of skill level to evaluate the initial mechanics. Subsequent phases focused on people with game experience and falling into our target market.

Phase One

Phase one's user testing plan was simple; we developed a series of targeted questions that a facilitator would ask the player after playing the game. Facilitators purposefully did not disclose information to collect data on the usability of our game. The targeted questions were as follows.

1. How did the control scheme feel?
2. How did you like the overall shape of the level?
3. How did you like the layout of the Depos, Fridges, and Machines?
4. Did you find the counter tops useful?
5. Was the GUI useable?
6. Did you prefer the item slot, hovering, item, neither, or both?
7. What was the perceived difficulty of the game?
8. What did you find fun?

The tester also had datapoints to collect that were not directly asked to the user. This included the following.

1. Did the user need help to learn the game mechanics?
2. Did the user finish level one? How many attempts?
3. Were there any game breaking bugs?

Phase Two

Phase two had a minor change to testing, now the users were instructed to complete a post play survey implemented using Google Forms. Testing in this method allowed developers to facilitate asynchronously and complete testing in a timelier manner. The format was similar, the only resources provided were the ones directly in the game or available on the public GitHub page. Questions asked in phase two included the following.

1. How did the spawning of the Drop off location, Trash can, Pickup locations, and countertops feel?
2. Did you enjoy the full recipe being always given to you? Would you like this to show all the time, or only after you have made it once?
3. Did you experience any game breaking bugs?
4. What did you find fun?

Phase Three

Phase three was the last round of user testing completed before project day and was facilitated the same way as phase two. In addition to optional new responses to the questions listed in phase two, the new questions asked were as follows.

1. How many items did you create?
2. Is the background distracting during gameplay?
3. What did you think of the end of day breakdown? Any changes?
4. How did the length of day feel?

5. What was the highest number of days completed?

User Testing Results

Throughout our project we were able to produce three instances of user testing out to the public with its own targeted questions which we thought was the most important at that time.

Pre-Alpha 0.0.1

Background	First iteration of game state: basic mechanics, maps, and GUI
Goal	Get feedback on basic game mechanics, usability of current GUI, difficulty, and control scheme
Results	i. Players felt comfortable with keyboard control scheme and was felt 'self-explanatory.' ii. Medium square map felt a little too big and uncreative. iii. Countertops were found unhelpful due to the difficulty being a little too easy. iv. GUI was currently unhelpful as it lacked presence and was often unseen.

Pre-Alpha 0.0.2

Background	Second iteration of game state: new recipe screen, updated maps and difficulty, added audio
Goal	Make more maps be desirable, get feedback on recipe screen, as well as updated feedback on modified difficulty, added targeted question "What did you find fun?"
Results	i. Majority of the users liked having full access to the recipes of products the entire time. ii. Game breaking bug was found after failure state and clicking 'continue'. iii. Difficulty became a little too hard and needed more adjustments. iv. Machine and counter tops spawners could be closer.
What did users find fun?	i. Audio sounds (machine and player sounds). ii. Planning routes was fun for users. iii. Learning how to make items.

Pre-Alpha 0.0.3

Background	Third iteration of game state: added background for each map, more game balance modifications, end of day breakdown screen added
Goal	Get feedback on background, test and make sure game balance is in a good state
Results	i. There was minimum two to four unique items being made per each user, so this indicates that the product unlocks needed more balancing and variability. ii. Most users found the background to be a good addition and was not distracting to the main gameplay. iii. End of day breakdown screen did not delve into the company mechanic and left users confused as to how that affected the gameplay. iv. Users mentioned that small maps were great with solo play, but big maps were a little too much and the game became too unfair.
What did users find fun?	i. “I like chemistry and I found that it was easy to pick up.” ii. “I liked the controls, and making recipes was fun once I learned the controls.”