Test Plan for Ethics Game Final Version

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15/15

1. Schedule

This is the schedule for our test plan. The goal was to test answering questions correctly, and incorrectly, if it was possible to exit the boundary, and editing the json file.

Boundary Testing- April 24, 2024

Answering Questions Testing- April 24, 2024

Edting questions.json file Testing- April 25, 2024

Retesting- April 28, 2024

2. Boundary Testing

This testing involved moving the character in the environment to make sure that the player could not go out of bounds. In the screenshot below it shows that the character is stopped by a map boundary that prevents the user from exiting the play area and being off screen. An arrow with Microsoft paint was drawn on the screenshot below pointing to the player to show them attempting to exit the boundary. They are not able to fully exit the boundary and go completely off screen. Only half of the user's player model is obstructed when they attempt to go fully off screen.
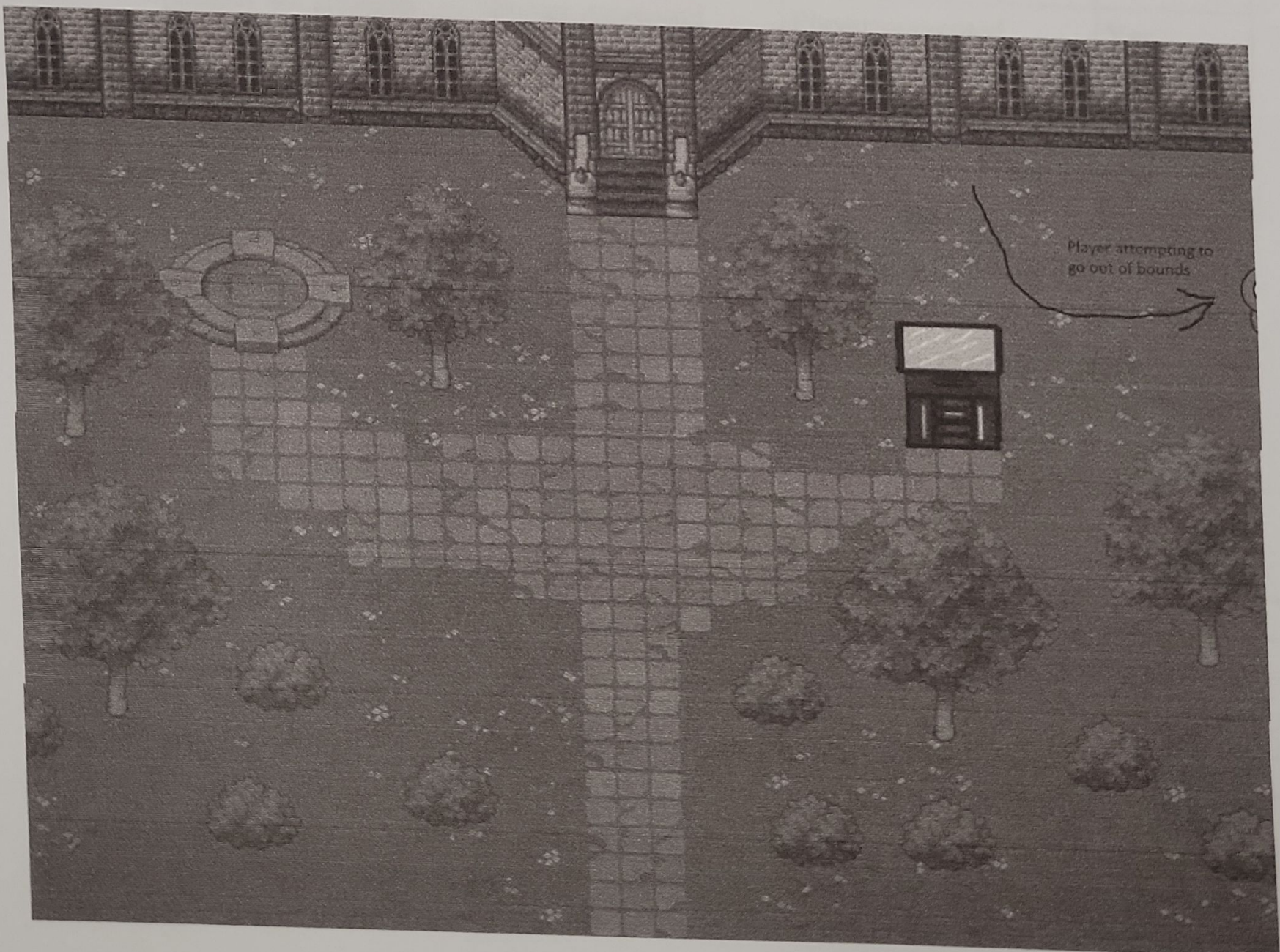
Table 1. Moving Outside of the Boundary Test Cases.

Type	Description	Expected	Realized	Pass
North Boundary	Player tries to exit North boundary	Player prevented	Player prevented	Yes
East Boundary	Player tries to exit East boundary	Player prevented	Player prevented	Yes
South Boundary	Player tries to exit South boundary	Player prevented	Player prevented	Yes
West Boundary	Player tries to exit West boundary	Player prevented	Player prevented	Yes
Proceed to next stage	Player advances to next stage when door remains locked	Player prevented	Player prevented	Yes

Table 2. Moving Within the Boundary Test Cases and Allowed Movements.

Player's movement direction	Expected	Realized	Pass
Left	Player allowed	Player allowed	Yes
Down	Player allowed	Player allowed	Yes
Right	Player allowed	Player allowed	Yes
Up	Player allowed	Player allowed	Yes
Diagonal	Player allowed	Player allowed	Yes

3. Answering Questions Testing.

If the user answers a question incorrectly or correctly, they will see the correct answer. For the tutorial level the player does not lose any lives. The testing process for this was very smooth.

Table 3. Answering Questions Test Cases.

Type	Objective	Realized	Actual	Pass
Brand	Correct	Answers correctly (A)	Correct	Yes
Brand	Correct	Answers incorrectly (B)	Incorrect	Yes
Brand	Correct	Answers incorrectly (C)	Incorrect	Yes
Brand	Correct	Answers incorrectly (D)	Incorrect	Yes

4. Editing questions.json File Testing.

The questions are in a json file, and this file can easily be edited when the user downloads all the Godot files. During this part of the testing this document will show what happens when the correct option index is a valid number, invalid number, or a different data type such as a char. There are a limited number of answer choices and for this question the valid indexes are 0, 1, 2, and 3. Any number or character other than that will cause an error. The correct option indexes are our test cases. This is what the input for one question looks like.

```
{
        "imagePath":
"res://assets/images/Association_for_Computing_Machinery_(ACM)_logo.svg.png",
        "question": "In the code of ethics ACM Members are referred to as?",
        "options": ["Computer Scientists", "Programmers", "Software Engineers", "Computing
Professionals"],
        "correctOptionIndex": 3
},
```

The next page shows our table. We used the same question for our testing because that does not impact the results in any way. The number of options would be the only thing that impacts the valid numbers for the correct option index.

Table 4. Editing questions.json File Test Cases.

Cause-effect analysis			
Test Cases	Input	Expected	Realized
In the code of ethics, ACM members are referred to as?	3 (computing professionals) Correct Answer	No errors	No errors
In the code of ethics, ACM members are referred to as?	5 Incorrect Answer	Error Invalid index	Invalid index
In the code of ethics, ACM members are referred to as?	-5 Incorrect Answer	Error Invalid index	Invalid index
In the code of ethics, ACM members are referred to as?	L Incorrect Answer	Error Invalid index	Invalid index
Which organization wrote the ten commandments of Computer Ethics?	2 (Computer Ethics Institute) Correct Answer	No errors	No errors
Which organization wrote the ten commandments of Computer Ethics?	-2 Incorrect Answer	Error Invalid index	Invalid index

Which organization wrote the ten commandments of Computer Ethics?	-1 Incorrect Answer	Error Invalid index	Invalid index
Which organization wrote the ten commandments of Computer Ethics?	D Incorrect Answer	Error Invalid index	Invalid index

5. References/Tools Used

Godot

Microsoft Excel

Microsoft Paint

Software Engineering 2nd Edition by David C. Kung, Chapter 20