

Deliverable H - Prototype III and Customer Feedback

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Group 01

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Abstract

This report presents the development of the third prototype in our engineering design project. The goal is to create a fully functional prototype that refines our solution based on previous iterations and customer feedback. This deliverable includes the objectives of prototyping, test plan, analysis of results, and insights from customer feedback. The report provides updates and specific instructions before the end of the project.

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1.0 Prototyping Objectives

- Creating a complete functional version of our solution.
- Address identified error from Prototype II.
- Improve functionality and usability based on previous prototype testing.
- Validate performance through targeted testing and customer feedback.
- Confirm that the project can run successfully with the VR.

2.0 Prototype III Development

In prototype I, we mainly modified the storyline based on clients' feedback. In prototype II, we started working on Unity. In prototype III, we conducted VR testing and found that the player control in prototype II could not be implemented in VR. We asked TA and learned that this was because VR required the creation of special player objects.

In Prototype III we combined the results of the first two prototypes and focused on VR testing. In this prototype we added some new functionality by testing VR, such as the thermometer and hygrometer. We also debugged some previous issues, such as the box collider and VR settings.

Here is our QR codes for the survey and online brochure:



2.1 Test Plan

Table 1: Prototype III Testing

	Probable Critical Issue (what)	Test Objective (why)	Test Description (how)
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Box Collider	All trees, stones and houses cannot be passed through by the player.	Improve the realism and functionality of the game.	Add box collider in the component and test whether the player can pass through these objects.
GitHub Sharing	Share the project from GitHub with team members and assign tasks.	Improve efficiency and allow more people to participate in development.	The sharing was successful [1], but the team member failed to upload the finished part.
UI	The set thermometer, hygrometer and timer are not visible in the user camera when using the VR.	The product's visual and interactive elements are intuitive and informative about climate change.	Keep the thermometer and hygrometer in the lower left and place the timer above the center of the user's camera.
VR Settings	Test whether the entire project can connect to VR and run successfully.	Ensure the success of project presentation on Design Day.	Every time you connect the VR headset; you need to set up Oculus Touch in OpenXR again.
Cut Scene	Test the connection status between the cutscene and the next scene. Make sure it works.	Ensure the coherence, narrative and success of the project.	Connect VR and Play. Modify the script and debug if any error is found.

2.2 Analysis

Since the team members could not upload the animation part successfully, the animation part could not be tested in this VR test. The rest of the parts also had problems during the VR test, but they were successfully fixed. In this prototype development, the project has been successfully run.

2.3 Feedback

In the professor's feedback, we thought our assets lacked realism, and we discussed this issue seriously. Unfortunately, due to limited time and budget, we can no longer support us to make major changes, but we will pay attention to this by adding realistic flames and using darker effects and sky when fires occur.

3.0 Project Schedule Update

Table 2: Plan for Tasks that need to be completed

Tasks	Estimated duration (due date)	Name of the responsible	Notes
End Scene	3 days (Mar.24)	M.B.	Make the end scene of the project (Forest after fire).
Player Actions	3 days (Mar.23)	J.D.	The cutting animation when user cutting trees.
Voice Line	1 days (Mar.23)	M.B.	Recorded voice line for character.
Poster	3 days (Mar.23)	R.K., O.O.	Design Day poster, including project information, background and survey.
Combination	2 days (Mar.25)	T.Z.	Putting all the pieces together and making the project run successfully.

4.0 Future Development

Table 3: Future Test Plan

	Probable Critical Issue (what)	Test Objective (why)	Test Description (how)
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Player Actions	Finished uploading the animation part to the main project file. There is a problem uploading the changes from GitHub.	Player actions are an important part of the project, and players learn and become educated about climate change and natural disasters through their interactions in the game.	Transfer and combine the files of changes made by team members via USB.
Voice Line	Need to add lines at the beginning, end and cutscenes of the project.	Through voice line, players can feel more involved and have a better experience, and the story can be advanced in a natural way.	Open the audio in Unity and play it where we want.
VR Testing	Test all new changes again and make sure they run successfully.	Ensure the success of project presentation on Design Day.	Find time to borrow the VR, test project and debug.

5.0 Task Separation Table

Sections	Author(s)	Editing
Abstract	O.O.	T.Z.
Prototyping Objectives	O.O.	T.Z.
Prototype III Development	T.Z.	-
Project Schedule Update	O.O., T.Z.	-
Future Development	T.Z.	-

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6.0 Resource

- [1] “How to Setup GitHub with Unity the Right Way,” Game Dev Garnet, 2024, <https://www.youtube.com/watch?v=tIiDb71t2s>
- [2] “Make a TIMER & COUNTDOWN in 5 Mins | Unity Tutorial for Beginners,” Rehope Games, 2024, <https://www.youtube.com/watch?v=POq1i8FyRyQ&t=115s>
- [3] “3D Survival Game Tutorial | Unity | Part 14 - Chopping Down Trees #1 (UI + Code),” Mike's Code, 2023, <https://www.youtube.com/watch?v=PQsHE4BQYDw&t=2361s>