Project Deliverable E

Project Schedule and Cost

Group 4

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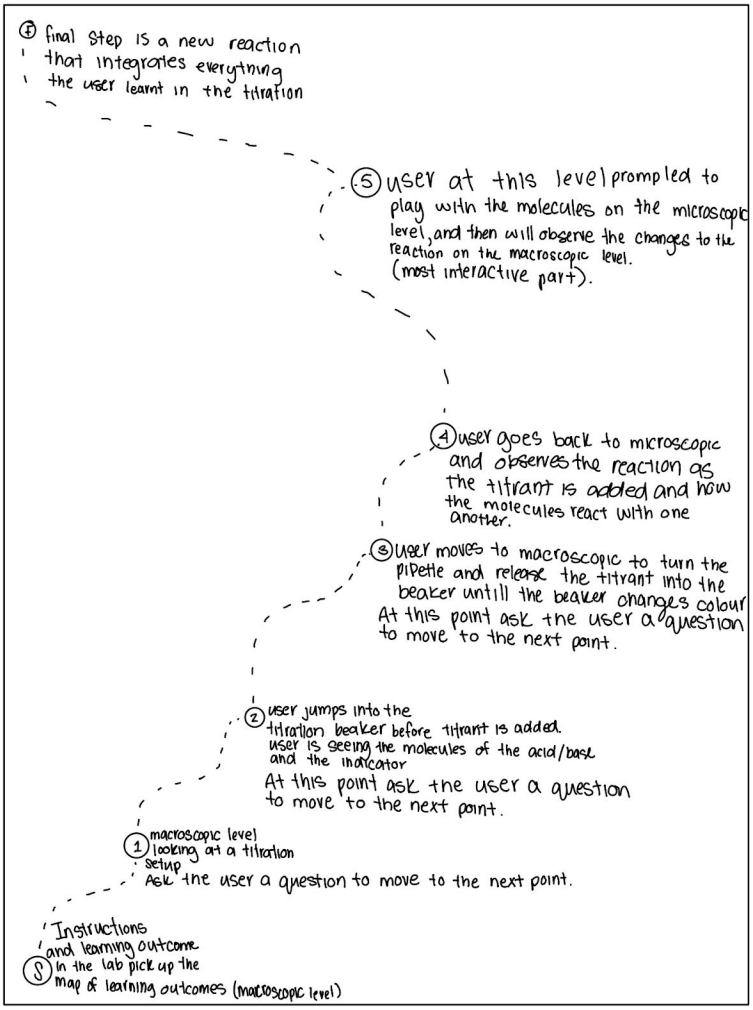
Introduction

In this deliverable our team is outlining each prototype and the individual tasks and goals required at each step. After the last deliverable, we decided that for our final design, we will show the acid-base reaction in the scale map VR environment designed throughout our deliverable D for conceptual design. For this deliverable we have expanded that idea and created the specific outline for our environment in the following diagram. We used his map to examine each part of the VR in order to understand where our design challenges are as well as to have a big picture of the final solution while we separate the project into separate prototypes. The diagram should be visualized as a plane on the x-z axis that the user will be "walking"/"teleporting" on to get to each stage of the game. For this project, we have decided to use the agile method for development. This means that each prototype will be functional in its own right, but none will be fully complete until the final build.



Project Plan

- Tasks
    - **Prototype 1 Expectations**: (A basic proof of concept)
    - Purpose: understand how the basic storyline will go
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Task	**Duration**	**Person responsible**
Setting up the environment from step 1 to step 5	2-4 hrs	Kayla and Mariana
Create map in VR for the entire game	4-5 hrs	Kayla
Use solid works to create the indicator, acid, and base molecules	3-4 hrs	Mariana
Design & implement quizzes for step 1 to 5	3-4 hrs	Jonah
Create molecule random movement and dynamics	1-2 hrs	Jonah
Use Steam VR create bow & arrow (and other interactables) for later use	1-2 hrs	Jackson
Use Steam VR to implement teleportation between steps 1 through 5	30min-1hr	Jackson
Create a way to transition from macroscopic to microscopic and vise versa	1-2 hrs	William
Create the laboratory for the start and step 1 (find an asset for this)	1-2 hrs	William

    - **Prototype 2 Expectations**: (The most critical subsystem)
    - Allow the user more freedom in experimentation
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Task	**Duration**	**Person responsible**
Finalize design for prototype 2	1-2 hrs	all
Consolidate usable elements from P1 Raise quality if needed	4-5 hrs	William

Design & implement tutorial	3-5 hrs	Mariana and Jackson
Design & implement playground (the final step of the game)	4-6 hrs	Jonah and Kayla
Buy assets needed	1 hr	all

- **Prototype 3 Expectations**: (Fully functional version)
- Create an almost final build that we can make small tweaks to before design day
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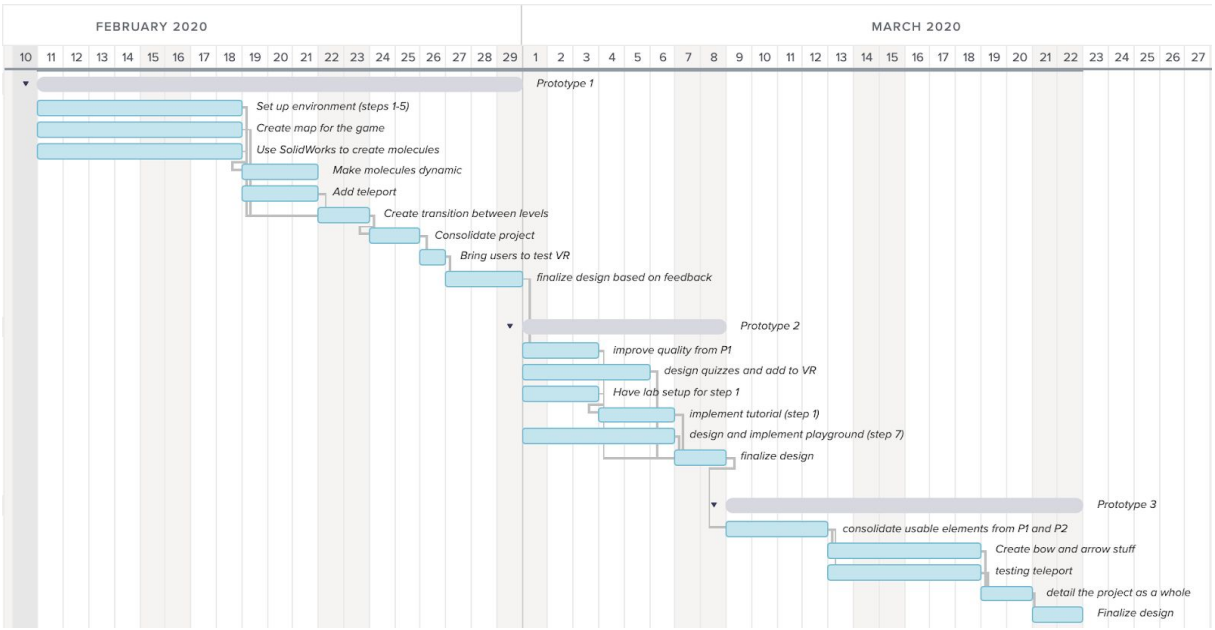
Task	**Duration**	**Person responsible**
Finalize design for prototype 3	1-2 hrs	all
Consolidate usable elements from P1 & P2 Raise quality if needed	3-4 hrs	Mariana
Test how to use bow arrow to shoot at target	1-2 hrs	Jackson
Testing teleportation	1-2 hrs	Kayla
Detail/debug the project as a whole	2-3 hrs	Jonah

- Gantt diagram (schedule)



- Possible project risks and contingency plans
    - Software crashes and the work done had not been saved. Must save progress constantly every so often. Have backup copies in different USBs or on the google drive.

- Costs of components & materials
    - No hardware costs
    - We will use placeholder models for now (waiting until our plan is more concrete before designing or buying fancier models)
        - Eg. a cylinder for the pipette, spheres for the molecules
    - The only resources we will use for the early prototypes are Unity, Steam VR, and the VR setup provided by the university

Possible Unity Assets

Asset	**Description**	**Cost**
Yughues Chemistry Glassware v2	Includes objects such as pipettes, beakers, test tube holders, graduated cylinders, etc.	$9.99
Bubbling Magic Potions	A collection of atmospheric bubbling magic potions and chemistry props. There's 8 potions in total in various colours and sizes. The bubbling potions include liquid bubbles, surface ripples, smoke and sound effects. A bunsen burner is also supplied, complete with animated flame, hose, tripod, gauze and audio.	$20
Liquid Particles	Liquid Particles is a great starting point for creating video game water, blood and other liquids. Features • 40+ Particle Systems • Colors changeable within Unity • Customizable	$20
Liquid Texture Effects - Volume 1	You will find 19 varieties of 64 image spritesheets used to create conventional animated liquid texture effects. - 1 C# script to manage effects with UV animation - 3 Lava types. - 5 Alien slime types - 4 Water caustic (perfect for underwater scenes). - 1 Rain drops type. - 2 Turbulence types. - 4 Water types.	$10

Map Designer	FEATURES: - Simple user interface - Node Editor - Supports both 3D and 2D designs - Automatic sprite sorting for 2D isometric levels - Easily edit scenes directly from the scene view - Use editor mode to add floors, walls and any objects with a single click - Use editor mode to modify designs easily. - Use multiple themes in same scene - 3 Example themes included	$20
Simple Quiz	This is a very professional looking Quiz project. You can change the questions and options in the quizdata.txt file and you are good to go! As simple as that! Since this project uses an external file to store questions, you don't have to worry about messing with the whole project every time you want to add, remove or edit questions!	$20
VR quiz	This package allows the user to create an advanced Quiz game with interactive buttons as shown in the video. This package also includes the Easy Curved Menu that implements a curved canvas used to show the scoreboard (left), the quiz (center) and the timer (right). In addition, this package includes the ”circle trigger” package, that allows the developer to create a loading bar when focusing on a button.	$16.99

We will decide which assets to purchase while we are creating the first prototype. The first prototype will have a budget of 50$, while the second and third prototype will have a 25$ budget each.