ChemVision Environment Documentation

Version 2.17.0

4/13/2018

Kaleb Cole

New Scene Creation

1. Create a folder inside [ ~/Project/Assets/Scenes/ ] and name this folder with the name of the scene that you want.
2. Create the new scene and save it inside of the folder.
3. Delete the Main Camera.
4. Add the VR Controller Prefab [ ~/Project/Assets/Prefabs ]
   1. Assign the Question Text and Information Text here
   2. Under Player, set the starting position, rotation, and the ability to move about the scene.
5. Add a terrain object by right clicking the Heirarchy and selecting [ 3D Object -> Terrain ]
   1. Save the terrain data in the scene folder that you created
   2. Tag the terrain with “- Terrain -”
6. Add a Scene portal to the main menu or subsequent scenes, so that players may access your scene
7. Import and add any other objects you want, making sure that everything imported is saved inside the scene folder, this will allow an entire scene to be copied with a single folder.
8. If you are making recursive scenes, scenes that will jump into other scenes, make sure to make these folders inside of the original Scene folder

When building a project, make sure the proper build environment is selected!!!

Answers on computers will be saved on the desktop in a folder labeled “Answers\_Folder” and on the android it will be in root/sdcard/Answers\_Folder

Asset Creation

|  |  |  |
| --- | --- | --- |
| VR Controller Prefab | Necessary | Project/Assets/Prefabs |
| The VR Controller is necessary for ChemVision to run properly. It handles the creation, deletion, loading, and unloading of objects and scenes. | | |
| 1. Insert the VR Controller Prefab into the Heirarchy | | |
| * Drag a text file into the Question Text slot to load questions * Drag a text file into the Information Text slot to load information * The starting position and rotation of the player is also set here * Checking the Allow Movement will allow the player to fly around, unselect this to prevent movement | | |

|  |  |  |
| --- | --- | --- |
| Terrain | Necessary | None |
| The Terrain is necessary for ChemVision to run properly. It creates a bounding box for the player to move around in. | | |
| 1. Create a Terrain in the Hierarchy - From Create -> 3D Object -> Terrain 2. Set the tag to “- Terrain -” 3. Resize, reshape, and recolor the terrain to your desire | | |

|  |  |  |
| --- | --- | --- |
| Waypoint Prefab | Optional | Project/Assets/Prefabs |
| The Waypoint Prefab is optional within a ChemVision scene. It allows the teleportation to an location. It also allows for the use of directional arrows to help the user turn to face the desired direction. | | |
| 1. Insert the Waypoint Prefab into the Hierarchy 2. Reposition the Waypoint to the desired location for teleportation 3. Either chose the Teleport (If you just want easy movement) or TeleportAndTurn (If there is a specific direction you want the player to turn) method. If the TeleportAndTurn method is chosen, an object will need to be inserted and the player wil be given arrows to turn in the direction of the object. | | |

|  |  |  |
| --- | --- | --- |
| GenericSpin Script | Optional | Project/Assets/Scripts |
| The GenericSpin Script is optional within a ChemVision scene. It allows rudimentary revolution of an object or group of objects. | | |
| 1. Place the GenericSpin Script into the root object that you want spinning 2. Choose the speeds of each axis to spin. 3. You can also select Toggle Spin which will allow the player to turn on and off the spin 4. You can also select Slow On Look which will slow the spin of the object when the player is looking directly at it | | |

|  |  |  |
| --- | --- | --- |
| Focus Script | Optional | Project/Assets/Scripts |
| The Focus Script is optional within a ChemVision scene. It allows the ability to focus rotate around a single point | | |
| 1. Place the Focus Script into the object you want to rotate around 2. Set the distance you want the radius to be for rotation | | |

|  |  |  |
| --- | --- | --- |
| Question | Optional | None |
| The Questions in a scene are optional within a ChemVision scene. It allows questions and answers to be generated around objects within a scene. The questions will be ordered by the priority number assigned to them within the questions text file. The same value can be used for multiple questions in which case they will appear in the order within the file. | | |
| 1. Create a text file within the specific scene folder for your scene 2. Set the reference inside of the VR Controller to this text file for the Question Text File 3. Create questions using the following syntax, *note: that this should all be on the same line*   (name of object)-(priority)-(question)-(answer 1)-(answer 2)-(answer 3)-(number of correct answer)  (string)-(integer)-(string)-(string)-(string)-(string)-(integer) | | |

|  |  |  |
| --- | --- | --- |
| Information | Optional | None |
| The Information in a scene are optional within a ChemVision scene. It allows Information and to be generated around objects within a scene. The Information will be hidden until the exclamation mark is pressed, this will reduce the amount of clutter that the user sees. | | |
| 1. Create a text file within the specific scene folder for your scene 2. Set the reference inside of the VR Controller to this text file for the Information Text File 3. Create information using the following syntax, *note: that this should all be on the same line*   (name of object being tagged)-(Text to be displayed)  (string)-(string) | | |

|  |  |  |
| --- | --- | --- |
| Generation Prefab | Optional | Project/Assets/Prefabs |
| The Generation Prefab is optional within a ChemVision scene. It allows the dynamic generation and deletion of a single type of prefab, even allowing multiple to exist at a single time. | | |
| 1. Place the Generation Prefab in the scene 2. Assign the object to generate by dragging a prefab into the field 3. Set the generation position, rotation, and maximum allowed in a scene | | |

|  |  |  |
| --- | --- | --- |
| Persistent Text Prefab | Optional | Project/Assets/Prefabs |
| The Persistent Text Prefab is optional within a ChemVision scene. It allows text to be continuously displayed in a scene. | | |
| 1. Place the Persistent Text Prefab in the scene 2. Set the Persistent Text to whatever you want it to say [ Persist ant Text Prefab -> Persistent Canvas -> Persistent Text -> Text ] | | |

|  |  |  |
| --- | --- | --- |
| ScenePortal Prefab | Optional | Project/Assets/Prefabs |
| The ScenePortal Prefab is optional within a ChemVision scene. It allows the player to portal to any scene from another, and multiple can take you to the same scene. | | |
| 1. Place the ScenePortal Prefab in the scene 2. Set the Next Scene with the name of the scene you wish to portal to 3. (Optional) add a picture to the scene portal | | |

|  |  |  |
| --- | --- | --- |
| AngleSpin Script | Optional | Project/Assets/Script |
| The AngleSpin Script is optional within a ChemVision scene. It allows the player to rotate an object a specific amount. | | |
| 1. Add the AngleSpin Script to an object 2. (Optional) drag an object into the object to spin, otherwise it will default to itself 3. Set the number of positions and how fast the spin should be in seconds, along with the axis of rotation | | |

|  |  |  |
| --- | --- | --- |
| Animation Prefab | Optional | Project/Assets/Prefabs |
| The Animation Prefab is optional within a ChemVision scene. It allows the player to move objects about the scene and control the movement direction of the animation. | | |
| 1. Add the Animation Prefab to the scene 2. Create a new text file and add the animation movements in following the formats below, note that <> are dependent on what you want and the actual text is a description of what to put    1. For a New Object   GAMEOBJECT=<Name of gameobject>   * 1. For Movement   MOVE=<X Coordinate>, <Y Coordinate>, <Z Coordinate>, <Time to move>   * 1. For Rotation   ROTATE=<X Rotation>, <Y Rotation >, <Z Rotation >, <Time to Rotate>   * 1. For a new movement set   PAUSE  (Pausing is done whenever you want a set of animations to automatically stop and require another button press to continue, this should be done when a specific event wants to be seen.) | | |

**EXAMPLE TEXT FILES**

**Information Text:**

Cube-Hello I am the cube that rules this land!

Sulfate-I Am a sulfate!

**Question Text:**

Question Cube-1-How would you describe this cube?-Bad-Pretty Awesome-Just OK-2

Question Cube-3-How big is this cube?-Planet Sized-Normal-Subatomic-2

Question Cube-5-This is not a question I just want to make sure that extremely long questions are handled well in the viewer. Let Kaleb know if it looks wonky.-OK-No-It Looks Wonky-1

Question Cube-2-What language is this project made in?-Java-Python-C#-3

Question Cube-4-What environment is this project made in?-Unreal-Blizzard-Unity-3

Sulfate-1-What am I?-Sulfate-Hydrogen Monoxide-Chocolate-1

Sulfate-2-Click 2.-Not Me-Me-Not Me-2

**Animation Text:**

GameObject=Animation Cube

Move=-100, 35, 100, .5

Move=-100, 65, 100, 1

Pause

Move=-100, 65, 70, .5

Rotate=-45,0,0,1

Rotate=-45,45,0,1

Pause

Move=-100, 95, 70, 1

Move=-130, 95, 70, 1

GameObject=Animation Sphere

Move=-100, 35, 80, .5

Move=-100, 75, 80, 1

Pause

Pause

Move=-100, 40, 35, .75

Move=-100, 100, 60, .75

Pause

Move=-130, 100, 70, .5