**Getting Started**

* Download and install the newest versions of the Github desktop application, the Unreal Game Engine, and the Unity Game Engine.
* During the Github desktop application installation you will need to select where the Github folder is located, this is very important, all of the work you do will be from this folder, so put it somewhere is to locate.
* You will need a decently powerful computer for this. Approximately 8 gb’s of ram, I5 or similar processor.

**Github Desktop Application**

* After downloading and installing, create an account. Github offers free private repositories to student if you create the account with you ASU email address.
* After creating account or if you already have one you will need to give it to Dr. Lewis so he can give you access to the BioRubeBot repository.
* Once you have access to the BioRubeBot repository, one team member will need to clone the 2016-Summer repository, changing the name to the appropriate year and semester.
* This will give you a repository for your team to work on. The next step is for each team member to branch off the master repository. Save the original state of the master repository, you may need a fresh copy of the original work.
* There is a problem with Github not understanding how to update the Unreal file type Umap. Umap’s are the levels that are constantly updated during use. The workaround we found was to break everything in to small tasks that can incrementally be updated to each other’s branches, see merging under the Github desktop application. This was very big and we did not notice at first we were stepping on each other’s toes when we would merge each other’s progress. Working on separate levels will help this a lot.
* Do not push all everything you work on, delete the unnecessary changes to keep the repository clean.

**Unreal Game Engine**

* Unreal is very big and complicated. You will spend a lot of time in the beginning just figuring out how to use the engine. Luckily Unreal is one of the best documented and has an extreme amount of written and video tutorials. Take time to look at them in the beginning. They are extremely valuable, so is the Unreal answerhub, you will notice very shortly that most things you Google about Unreal will take you to the Unreal answerhub page.
* Once Unreal is installed and updated, you will have an Epic Games launcher. Open this app and you will be at the launch screen for Unreal. Launch the newest version.
* At the bottom right of the projects screen select browse. Browse to the Github folder and select the appropriate repository.
* You will now be in the actual game engine, if you cannot see the main menu then you will need to adjust the perspective. There is small button in the top right of the viewport that probably says top or perspective, change that to front or top until you see the main menu
* There are two ways to do everything in Unreal, by writing C++ code or using Blueprints. Blueprints are a visual representation of objects with their own functions. We used Blueprints only to get the functionality that we got. Using easy functionality the node system for Blueprints was fine but once we got to more functionality we found the code ended up like spaghetti code and think that converting that kind of functionality into easier to read and change C++ code.
* Images need to be converted to Sprites.
* Actors are blueprints with more movement-based functionality.
* Widgets are used for more interactive functionality
* The assets are in the main Content folder and a subfolder under Maps->Game folder for the free play level

**Unity Game Engine**

* Go to the Github webpage, not the desktop application. Go to the last semester that used the Unity game engine, 2016Spring\_Final and select the clone or download button and select download zip. This will download the zip file, notice where the download is located.
* Open the Unity game engine and select open. Browse to where the zip file downloaded and select the non-extracted zip file. This will open the game into the Unity editor. Select play and you can play the last “complete” version of the game. I took a couple videos of Dr. Cline playing and explaining the gameplay, they are located on the BioRubeBot Slack channel, see Dr. Lewis if you do not have access to the Slack channel.

**Next Steps**

* Familiarize yourself with Unreal. Try lots of different things but take notice that everything you do Github will keep track of so keep in mind not to save the changes that do not work.
* Get with Dr. Cline early and get exactly what she wants, then go to Dr. Lewis and get that info prioritized. We started incrementally from the start but different requirements were given during the last sprint. Due to using the agile method, we were able to shift gears easily.
* Worked on the tutorial but was informed by Dr. Cline to stop work on the tutorial because she never liked it. Check with her to see what she thinks the tutorial should look like.