1. **(5 points)** In a Readme file, write a short description of yourself. In addition to your name, your department and whether you are a graduate or undergraduate student, describe the most complex computer program (graphics or non-graphics) you have written thus far in your career. This helps me understand your programming skills so I can assist you better down the line. Any document that can show text and images are acceptable for submission (word, pdf, html, etc.). No raw Latex files please!

**My name is Justin Merkel and I’m a graduate student pursuing his M.S. in Computer Engineering. I’ve written multiple complex programs over my internship with BAE systems which I can’t show and in my classes. My interest in computer graphics stems from working on a hardware graphics pipeline for a simple version of OpenGL. I will attach my CPRE 525 final project report that includes the fortran code at the end. I could attach some of the code from other classes, but it would be too large for a submission.**

1. **(5 points)** This question is to get familiarized with Unity environment. Do the following and you will get your five points.

* 1. Create a new 2D Unity project
  2. Download hw1-dots\_package.zip from Canvas. Unzip the package.
  3. Once unzipped, it will show up as ‘hw1-dots\_package.unitypackage’.
  4. Import this package into your 2D Unity project (Assets >> Right click >> Import package >> Custom Package >> Import All). This will create two folders ‘myScenes’ and ‘myScripts’ in Assets.
  5. Create a new empty game object in your Hierarchy and make sure they are located at (0, 0, 0).
  6. Apply DrawDots script to the game object.
  7. Hit the play button and take a screenshot of the three dots of your Unity environment showing both the Unity editor and the Game window. Then, paste the screenshot in your readme file.

**The screenshot is attached below and in the images folder of the submission zip**

**Graphical user interface

Description automatically generated with medium confidence**

1. **(10 points)** Demonstrate your skill and creativity by altering DrawDots.cs to do the following:
   1. Add a fourth dot by extending the OpenGL function calls in the skeleton code provided to you.

**Image of the fourth dot (also in the images folder)**

**A picture containing graphical user interface

Description automatically generated**

* 1. Write code to show your name initials. You can either reuse/modify

MakeADot() or create another function that uses GL.Lines

**I wrote a quadratic Bezier curve function to get a J and simple GL Lines to get the M in my initials (also in folder)**

**Graphical user interface

Description automatically generated**

* 1. Explore and get comfortable with the Unity editor. Sky's the limit. If you think you can add some cool feature(s) using GL or Unity built-in functions, go ahead and demonstrate your scripting prowess.

**After getting my nice Initials using Bezier curves I decided to move the initials with my mouse. That alone did not feel like enough cool features so I also looked up some built in Unity functions that allows me to use transform.rotate to rotate based** **on the mouse position as well. This does not show well in an image which is why I attached a screen recording in the /images folder. Here is a screenshot from that video.**

**A screenshot of a computer

Description automatically generated**

* 1. Export your scene as a Unity package (Assets >> Export Package >> Select all relevant items >> Export >> hw1\_<Firstname>\_<Lastname>.unitypackage)