**Design Statement:**

For this project I set out to produce a 3D spider model and a walking animation to use in a game I was calling ‘Spiderlich’ at the time. I referred to images of European domestic house spiders, tegenaria domestica, while shaping the spider model using 3D Studio Max. I gained familiarity with some of the tools of the program in the process. I combined base 3D shapes repositioning vertices as I went to represent the spider’s shape. In order to ensure the model was largely symmetrical I used mirroring. After I had made final adjustments to the model, I rigged it, adding bones to be used during animation. Then to create the walking animation I referred to videos of spiders as well as this unattributed [clip](https://www.youtube.com/watch?v=GtHzpX0FCFY). I placed target vertices for the feet at different keyframes of the animation to coordinate the movements of the legs and attempted to simulate a motion of lifting and reaching forward with one set of feet while simultaneously pushing backwards with the other set of feet.

I then created a scene in Unity, added the spider model to it, as well as an animator object to handle the animation, and a cube to test physics capabilities. Finally I wrote a script in C# to establish the movement behavior that the spider would walk to locations where the player right-clicked using the walking animation. Additionally, in the process of writing this script I added statistics for debugging.

In working on this project I gained experience working in 3D Studio Max and learned a few new techniques to aid with model production, such as mirroring. I spent a lot of time making adjustments to the model, sometimes positioning individual vertices, and that practice has definitely contributed to my comfort using the program. I also learned about 3D model rigging and animation within 3D Studio Max as well as integrating such animations into a Unity game using an animator object. In sum, working on this project I gained invaluable experience developing 3D models, and learned about the process of rigging and animating 3D models.

**List of Files:**

Video -

<https://www.youtube.com/watch?v=cpFHuYHj-84>

Spider Model\* -

<https://github.com/toadSTL/LCAD_Application_Portfolio/blob/main/Spider_ModelAndAnimation/Spider.FBX>

Spider Movement Scene\* -

<https://github.com/toadSTL/LCAD_Application_Portfolio/blob/main/Spider_ModelAndAnimation/Spider_Model_and_Animation.zip>