Porch Pirates

CSci 3081W Final Project (Gresh and Jace)

What is it?

An extension to the original Drone Delivery Simulation Model that adds 'Porch Pirates'

These pirates will walk around the model (patrolling) until a package is dropped off. If within a certain distance, the pirates will take notice and run straight to the package in an attempt to steal it. The receiving robots no longer spawn directly at the drop off point and instead spawn at a nearby, but random, point. Because of this, when the package is dropped off the pirate and the robot will race to the package. If the pirate gets to it first it will take the package back to its pirate ship before resuming its patrol, while the robot will remain at the drop off site, wallowing in despair. If the robot gets to it first, the pirate will go back to patrolling.

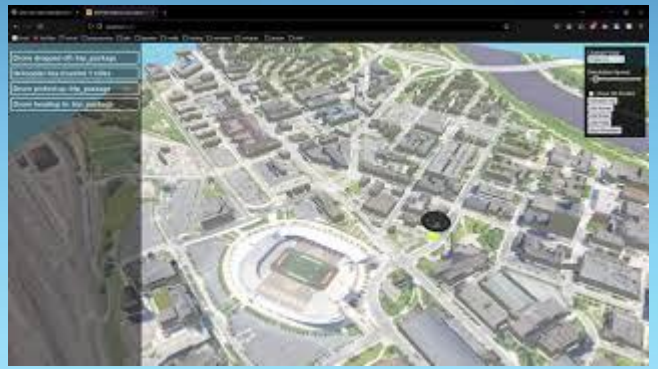
Why is this new feature important?

This new feature significantly alters the delivery system. Like in real life, people don't (typically) stand at their mailbox all day waiting for a package to arrive. So why should our robot friends do the same? This dynamic results in the simulation being slightly more accurate to the real world than before.

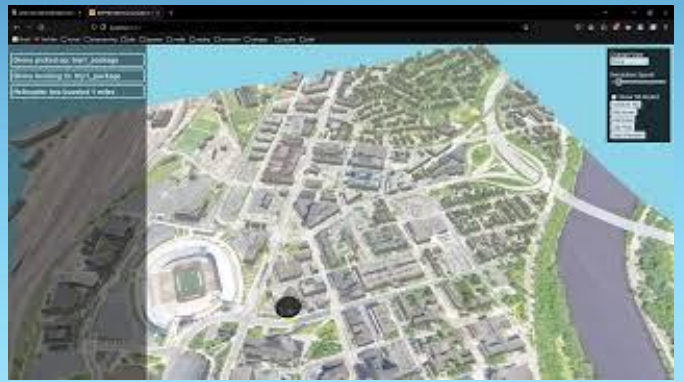
Which design pattern did you use?

This new feature incorporates the factory design pattern to create the pirates and pirate ship seamlessly as well as the observer design pattern to notify of a package's delivery, resulting in the receiver robot and any nearby pirates of its existence.

Demo



Pirate successfully steals a package



Robot successfully receives package

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