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CS – 330
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iRobot Create 2 Project 3 Report

The third project assigned provided us with the task of moving the iRobot Create 2 around a four foot by four foot square on the floor of the classroom. Doing so meant the robot had to completely cross over each of the four corners of the square, all of which were marked using tape. We were also required to inherit and utilize a class separate from our main classes that defined all of the robot's relative commands through the use of methods and variables: Robot.py. The use of this class would allow us to keep the code much more compact, efficient, and legible, not to mention introducing us to the idea of inheritance in Python.

Triny and I went through several stages of development in terms of this project: planning, designing, testing, and reviewing. In the planning stage, we thought through several different ways in which we could handle the task. Two major ideas were to either circle around the square or simply follow its edges from corner to corner. We chose to do the latter, which moved us into the designing stage. This stage involved us both working to code the robot and main classes, link them together, then use the main class to call upon the robot class for the commands we needed. When the code was in a semi-testable state, we immediately moved to testing out our code. At first this involved just ensuring that it worked, but it quickly moved onto us testing how the robot was moving along the square. This step took longer than any other as we had to test repeatedly to find which velocities worked best, especially because the robot had to drive over different floor textures that could throw off our inputs. At that point we had also decided that the Drive Direct command would likely be more useful in keeping the robot on its course. Since we could then control the velocities of each wheel separately, we could counteract the differences in friction along the edges of the square. After many adjustments both inside and outside of class, we officially tested our code to receive a grade. Afterwards was the review stage in which we simply looked over our code and made sure that it was formatted and documented correctly.

Through our efforts, Triny and I were able to move the robot over the four corners of the square and successfully complete the task. Working through this project both reinforced and taught us more about the Create 2 and Python. Particularly, we were provided more understanding of inheritance in Python and the use of the robot's commands to a heavier degree.