May 26, 2023 - Week 1

So far this week I have read the three papers you have given me and tried to become comfortable with the Webots software. I'm trying to create a robot object and controller from scratch, so that I can add a camera inside and possibly add other features into the design. Even after, reading this paper I have a basic understanding of how a robot's current state, recording its outcome, and receiving certain rewards affect a robot's actions, but I'm still confused on the specific details on how they utilize Reinforcement Learning, so for the next few days I'm planning to do research on how to programming in RL format. I do have a plan for utilizing Webots. For the kicking, since the robot doesn't have a "kicker" I would just ram the entire robot at a ball object to transfer the momentum, similar to a kicking motion. With tracking progress with the robot, I would use the camera to measure the distance between the ball and the goal. If the ball is too far from the goal then it's a miss, but the robot would receive a reward if the ball is at a certain distance from the goal. I'm not sure how to implement this idea directly with reinforcement learning. For the goal, I would use a solid object instead of a net.