6645A Code Introduction 2024 - 2025

Hello and welcome to the team 6645A coding notebook! This page will serve as an introduction going over the ideas and coding goals for this season. We plan to have as many of these features discussed completed by the first competition.

For our main code since we are planning to carry over features from last year that we found useful. To start off last year we developed a robot locking system that maintained position when being pushed against by other robots without input from the driver, we found this very useful in competition of force despite being underpowered torque wise due to our use of blue motors. Similarly we would also like to carry over our position holding system for our planned arm this year that we developed for robot arm last year. This system acted like the robot position holding system but for the arm.

Moving on, this season we would like to focus a lot on our robot's autonomous capabilities and will be primarily documenting our robot's autonomous systems. This year we plan on having a cleaner autonomous selector than last year since the team's experience with the LVGL graphics utility for VEX has increased. We would also like to increase our autonomous development options this year. Extending off our simple autonomous file editor last year we would like to make an autonomous development app this year.

Our planned autonomous development app will feature a simulated field and programming input terminal that will take in simple commands and display how the robot moves in response. As a command in finished updated code will be given in the terminal that can be pasted in to use with a planned odometry system. We would like to implement said odometry system ideally using custom code for control, but we might end up using the okapi library. We will use tracking wheels for reliability in our odometry, ideally 3 wheels, but we might only manage 2.

We would also like to implement a partner controller system that will be fully integrated into our autonomous replay function being carried over (with rebuilding) from last year. Last year we developed a basic system that can record robot movements and play them back in autonomous, and we would like to optimize that system to use smaller files whilst adding partner controller recording.