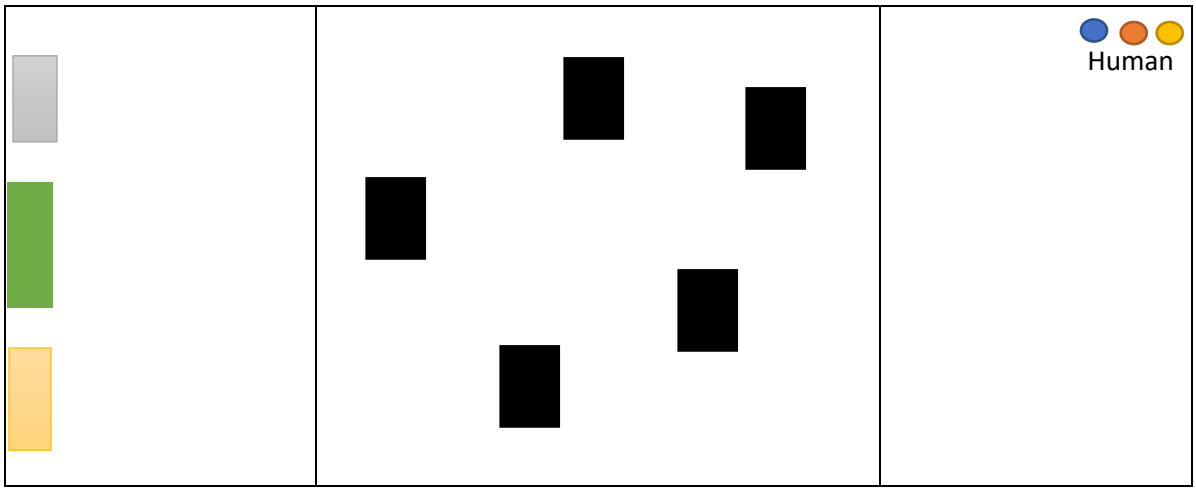
Final Project 2023



Start area (and finish area) | Rock Field (obsacles area) | Mining area (Human area)

1. Traverse from start area to mining area
    a. Start at any orientation and turn and go to mining area
        i. Less points for having to start facing the playing field, no orientation ability.
    b. Subtract points for rocks hit (rocks are white notebooks, three will be set out). I will give out a sample score sheet with all the points, linked on today's lecture.
    c. After getting through obstacles, Identify mining area when you cross over it (there will be a line – the line is same color as the line following assignment) verbally by robot (it should say mining area when enters)

2. Mining area, mine ice by finding a human.
    a. Find human with a block of ice, the ice will be a piece of paper which is one of three colors.
    b. Drive to human
        i. Less points for human being in designated spot, or human going to robot.
    c. When human is within two feet ask human for ice
    d. Human has one of three colors of ice that correspond with the colors of the scoring area targets. If the robot can say the correct color you get the points, if the robot has to have one particular color, or the robot says the wrong color no points for this part.
    e. The color will be declared before the start but you will not have a chance to change your code, you must be able to handle any color of the three colors for full credit. If you want to bail on this part and just program for one color you can do that for less points.

    f. Have your robot memorize the color and then the robot returns to the start area.
3. Return to start area across rock field.
    a. Subtract points for rocks hit
    b. Identify start area when crossing line verbally (by robot). Start line will be a line of paper similar to the gold paper line, but this one will be blue.
4. Hit the correct target
    a. You have to touch the proper goal. Three goals, three colors.
        i. Yellow goal
        ii. Green goal
        iii. Pink goal
        iv. If you can't pick the goal you can choose to ram any goal, or just have one goal and hit that one goal that will be in the middle.
    b. Touch the goal that matches the color you were given by the human. If you want to only use one goal, and ignore the colors you can do that for less points.
5. Do it under time limit and get more points.

Other Rules:

1. You can put something for visual cues, a visual marker of your choice, on the end of each playing field for help with orientation and robot navigation.
2. If not attempting beginning orientation you can place your robot on center X facing the way you want it. Then three notebooks will be set up after robot is placed.
3. Open Lab times will replace a couple of lectures for extra time to work on this, starting this Friday.
4. EACH TEAM GETS THREE ATTEMPTS AND WE USE THE HIGHEST POINT TOTAL.
5. Score sheets will be attached on D2L below this link.
6. If you need to turn your robot manually during the run you can do that, but each time you touch your robot you will lose points (see score sheet).

Demos will be on Monday May 1, Tuesday May 2nd and Wednesday May 3rd. After May 3rd at 2pm the project will be considered late.