Group 8

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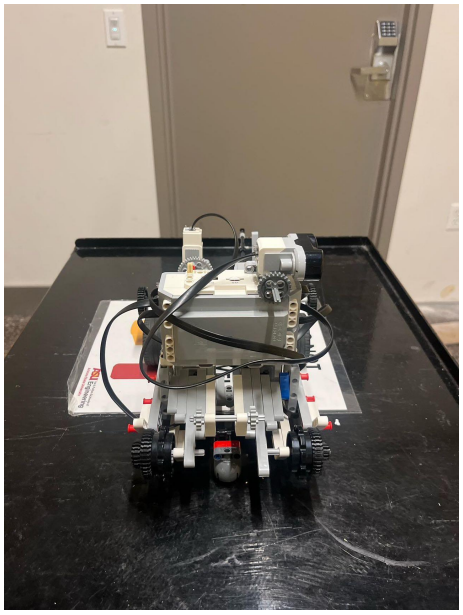
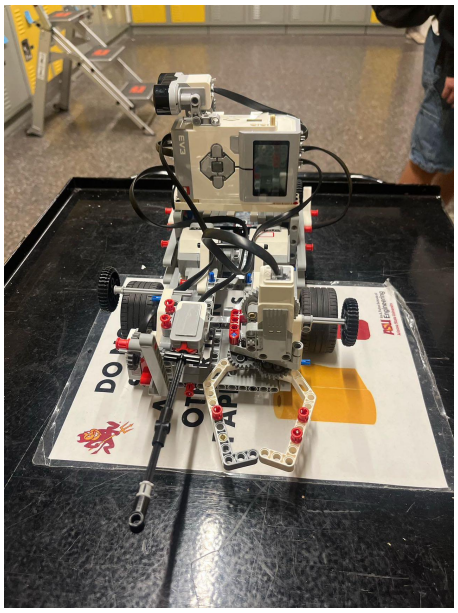
Photo of Final Design





Link to a YouTube video

https://youtu.be/I_0suKG4U_o?feature=shared

The code used for your demonstration

```
global key
InitKeyboard();
speed = 30;
turnTime = 1.1;
turnDelay = 4.5;
stopTime = 2;
redDelay = 0;
manual = false;
brick.SetColorMode(1, 2);
while 1
    %color sensing
    color_rgb = brick.ColorRGB(1);  % Get Color on port 1.
    %color notes
    %yellow: Red: 153 Green: 68 Blue: 34
    %green: Red: 29 Green: 71 Blue: 40
    %red: Red: 114 Green: 15 Blue: 23
    %blue: Red: 17 Green: 51 Blue: 129
```

```
    %Updated blue: Red: 10 Green: 35 Blue: 100
    %black: Red: 10 Green: 11 Blue: 12
    %print color of object
    fprintf("\tRed: %d\n", color_rgb(1));
    fprintf("\tGreen: %d\n", color_rgb(2));
    fprintf("\tBlue: %d\n", color_rgb(3));
    %Turn on manual controls on blue and yellow
    %yellow first blue second
    %Updated blue: Red: 10 Green: 35 Blue: 100
    if color_rgb(1) >= 98 && color_rgb(2) <= 65 && color_rgb(3) <= 35 ||
color_rgb(1) <= 50 && color_rgb(2) >= 18 && color_rgb(3) >= 85 || color_rgb(1)
<= 40 && color_rgb(2) >= 50 && color_rgb(3) <= 60
        manual = true;
    end
    if manual == true;
        turnDelay = 4;
        %manual controls
        switch key
            case 0
                brick.StopMotor('A');
                brick.StopMotor('B');
                brick.StopMotor('C');
            case 'w'
                brick.MoveMotor('A', speed);
                brick.MoveMotor('B', speed);
            case 's'
                brick.MoveMotor('A', -speed);
                brick.MoveMotor('B', -speed);
            case 'a'
                brick.MoveMotor('A', speed);
                brick.MoveMotor('B', -speed);
            case 'd'
                brick.MoveMotor('A', -speed);
                brick.MoveMotor('B', speed);
            case 'q' %open
                brick.MoveMotor('C', 15);
            case 'e' %close
                brick.MoveMotor('C', -25);
```

```
            case 'x'
                manual = false;
            case 'v'
                break;
        end
    else
        %Basic move forward, this runs if nothing else takes over
        brick.MoveMotor('A', speed);
        brick.MoveMotor('B', speed);
        %Always keep claw closing
        brick.MoveMotor('C', -25);

        %red: Red: 114 Green: 15 Blue: 23
        %Pauses on red and plays sound
        if color_rgb(1) >= 70 && color_rgb(2) <= 25 && color_rgb(3) <= 25 &&
redDelay == 0;
            brick.playTone(100, 800, 500);
            brick.StopMotor('A');
            brick.StopMotor('B');
            redDelay = 2;
            pause(stopTime);
        end

        %Sets timer so it only stops on red once
        if redDelay > 0
            redDelay = redDelay - 1;
            pause(1);
        end

        %distance and touch sensing variables
        distance = brick.UltrasonicDist(2);
        reading = brick.TouchPressed(3);
        %display(distance);

        %listens to distance sensor unless there is a touch
        %Go, if there is no well to the right turn right
        if distance > 60
            brick.MoveMotor('A', speed);
```

```
            brick.MoveMotor('B', speed);
            pause(1.5);
            brick.MoveMotor('A', -speed);
            brick.MoveMotor('B', speed);
            pause(turnTime);
            brick.MoveMotor('A', speed);
            brick.MoveMotor('B', speed);
            pause(turnDelay);
        else
                %if touch back up and then turn left
                if reading == 1
                    brick.MoveMotor('A', -speed);
                    brick.MoveMotor('B', -speed);
                    pause(.7);
                    brick.MoveMotor('A', speed);
                    brick.MoveMotor('B', -speed);
                    pause(turnTime);
                    brick.StopMotor('A');
                    brick.StopMotor('B');
                    reading = 0;
                end
                display(distance);
        end
        display(reading);


    end
end
CloseKeyboard();
```