Example 1 - Automation through Programming AR problem 3.4

Assignment #6-Automation through programming-Attachments

Group Member's Names: Chase K, Luke A, Jackson C
Materials Person: Chase Kane
Project: Automation through programming
Date: 11/15/21

Materials List for Robotics (use the following links to get names of parts - we do not have all of these and you may need to substitute. You can also look on the wall in the back.)
https://docs.google.com/presentation/d/1-_PIlswPQbc3iOPfq96l3cXMghaYtLU0WVn4JZTYuo/edit?usp=sharing

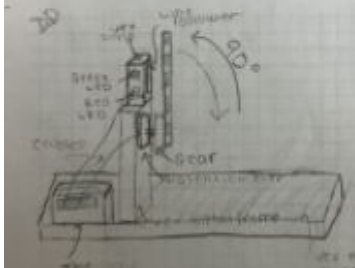
Part name	How many?	initials
Colorthermeter	1	C.K, LA, JC
2 LED's (green+Red)	2	C.K, LA, JC
Cortex	1	C.K, LA, JC
vex baseplate 15x5	1	C.K, LA, JC
Small Gear 36 tooth	2	C.K, LA, JC
Motor	1	C.K, LA, JC
Bump switch	2	C.K, LA, JC
Flat Bar 1x12	1	C.K, LA, JC
C-Channel 1x5x1/2	1	C.K, LA, JC
Lead screw rotating bracket	1	C.K, LA, JC
steel plate 15x5	1	C.K, LA, JC
Rack bracket	1	C.K, LA, JC

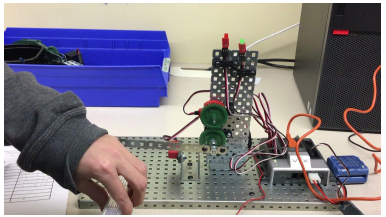
PLTW Gateway — Automation and Robotic

Project 3.4a Automation Through Programming Project Summary

Team Members:
Mechanical: Chase Kane
Electrical: Luke Ambrose
Computer: Jackson Connolly
Project: Tool Booth Date: 11/10/21 Section: P.C.
Mechanical Engineer:

Draw an isometric sketch or three-view orthographic sketch of the model. Label all electrical devices.





```
#pragma config(Sensor, dgtl11, red,          sensorLEDtoVCC)
#pragma config(Sensor, dgtl12, green,        sensorLEDtoVCC)
#pragma config(Motor,  port1,           clawMotor,     tmotorServoContinuousRotation, openLoop)
#pragma config(Motor,  port2,           rightMotor,    tmotorServoContinuousRotation, openLoop)
#pragma config(Motor,  port3,           leftMotor,     tmotorServoContinuousRotation, openLoop)
//*!!Code automatically generated by 'ROBOTC' configuration wizard               !!*//

task main()
{


 repeat(forever)

 {

turnLEDOn(green);

until(Light(2950, lineFollower);
wait(1);
startMotor(rightMotor, -19)
turnLEDOff(green);
turnLEDOn(red);


until(PotentiometerGreaterThan(1200, potentiometer);
stopMotor(rightMotor);
wait(3.5)
startMotor(rightMotor, 19);
until(PotentiometerLessThan(140, potentiometer);
stopMotor(rightMotor);
turnLEDOff(red);
turnLEDOn(green);

}



}
```

Assignment #6-Automation through programming

1)**What sensors did you use to solve this problem?**

We used the potentiometer so it could open and close when a car got near. Before we were having trouble with the gate overoating and the speed going to fast. We were able to decrease the speed programming after this we got it to work.

2) **Was this an open or closed-loop system? Why**

It is closed system because it does not require humans to make it work. When a car approaches it will automatically open and close on its own.

Assignment #6-Automation through programming

3) **Explain two malfunctions with the solution that your team had to troubleshoot**

We had trouble getting the lights to stay on and off. They would both go on at the same time then after we got only one to go on one turned yellow. After working with my group we were able to get both the lights to go on one at a time.

4) **Describe two responsibilities that you held during this project**

I tired to be the best help Jackson did most of the programing but I tried to offer advice if he needed it. I also made sure we knew what we during doing and asked follow up questions to my group to make sure what we did met requirements.

Assignment #6-Automation through programming

Source 1

https://eepower.com/resistor-guide/resistor-types/potentiometer/#

Source 2

https://www.gindestarled.com/how-to-program-led-light-strips/