**CSC368/CSCM68 Embedded System Design – Lab Task 3**

1. One sensor we used is the colour sensor. The purpose of the sensor is to detect when the colour changes from the current floor colour to white so it knows that it has reached the white spot and needs to change directions.

Another sensor we used is the gyro sensor. The purpose of this sensor is to know when the driving base has turned exactly 180 degrees before moving again because once it reaches the white spot, it needs to go in the reverse direction.

**A picture containing outdoor, way, sidewalk

Description automatically generated**

1. The algorithmic idea is that the driving base is intended to go straight and while it is going straight it should continually check if the colour sensor has picked up the white spot. Once it reaches the white spot, the driving base needs to stop and continually rotate until the gyro sensor picks up the next occurrence of 180 degrees from the gyro sensor so it is able to go in the reverse of the direction it was originally going. It needs to complete all of these steps 10 times.

|  |
| --- |
| ev3 = new EV3Brick()  leftMotor = new Motor(Port.B)  rightMotor = new Motor(Port.B)  lineSensor = new ColorSensor(Port.S1)  gyroSender = new GyroSensor(Port.S3)  speed = 300  rotatation = speed / 2  for i=0 to 9    leftMotor.run(speed)  rightMotor.run(speed)  run = true  while run  if lineSensor.color == Color.WHITE then  leftMotor.hold()  rightMotor.hold()  leftMotor.run(rotation)  rightMoto.run(0 – rotation)  while gyroSensor.angle() < (180 \* (i + 1))  continue  endwhile  leftMotor.hold()  rightMotor.hold()  run = false  endif  endwhile  next i |

A screenshot of a computer

Description automatically generated

A screenshot of a computer

Description automatically generated