HARRY MAZE

HARRY PATH

Flow of Program

1. Define 3 IR and 4 Motor each in corner
2. Create 4 function forward (), rotate (), …
3. Make its bias to move forward, then right, then left, finally backward. This according to given Maze.
4. Make function to take the reading of all IRs

SETUP

```
void setup()
{
//define IR pins
  pinMode(IR_UP    ,INPUT);
  pinMode(IR_RIGHT,INPUT);
  pinMode(IR_LEFT  ,INPUT);

//define MOTOR pins
  pinMode(LEFT_MOTOR_UP     , OUTPUT);
  pinMode(LEFT_MOTOR_DOWN   , OUTPUT);
  pinMode(RIGHT_MOTOR_UP    , OUTPUT);
  pinMode(RIGHT_MOTOR_DOWN  , OUTPUT);

}
```

LOOP

```
void loop()
{
  readSensors();

  if (up == HIGH )
  {
    //Always bias to go forward than other directions
    moveForward();
  }
  else if (up == LOW)
  {
    if(right == HIGH)
    {
      //Always bias to go right than left
      rotate90right();
    }
    else if (left == HIGH)
    {
      rotate90left();
    }
    else
    {
      //if end up in no way up,right and left , then we back
      moveBackward();
    }
  }
}
```

HARRY SAFE

FLOW of Program

1. Define Encoders Signals A and B and declare there ISR
2. Create function to take reading of degrees
3. Check position of encoders if as it given led is turned on

SETUP

```
void setup()
{
  //define pin Modes
  pinMode(ENCODER1_A , INPUT );
  pinMode(ENCODER1_B , INPUT );
  pinMode(ENCODER2_A , INPUT );
  pinMode(ENCODER2_B , INPUT );
  pinMode(ENCODER3_A , INPUT );
  pinMode(ENCODER3_B , INPUT );
  pinMode(GREEN_LED  , OUTPUT);

  //define interrupts
  attachInterrupt(digitalPinToInterrupt(ENCODER1_A) , ISR1_A , CHANGE);
  attachInterrupt(digitalPinToInterrupt(ENCODER1_B) , ISR1_B , CHANGE);
  attachInterrupt(digitalPinToInterrupt(ENCODER2_A) , ISR2_A , CHANGE);
  attachInterrupt(digitalPinToInterrupt(ENCODER2_B) , ISR2_B , CHANGE);
  attachInterrupt(digitalPinToInterrupt(ENCODER3_A) , ISR3_A , CHANGE);
  attachInterrupt(digitalPinToInterrupt(ENCODER3_B) , ISR3_B , CHANGE);

}
```

LOOP

```
void loop()
{
  readDegrees(); //read the degrees of encoders

  if (degree1 == 37 && degree2 == 10 && degree3 == 54)
  {
    //when degrees in this position light the led
    digitalWrite(GREEN_LED , HIGH);
  }
  else
  {
    digitalWrite(GREEN_LED , LOW);
  }
}
```


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