```c
#include "ADC1.h"
#include "clock.h"
#include "GPIO.h"
#include "LCD_IO_Init.h"
#include "PWM.h"
#include "main.h"
#include "Sensor.h"
#include "Infrared.h"

int main()
{
  clockInit();
  ADCinit();
  initRegisterForPWM();
  initPWM();
  initSensor1Ports();
  initDriverMotorPorts();
  initInfrared();


  //Turns motor drive standby on so that the motor is activated
  GPIOC->ODR |= GPIO_ODR_ODR6;

  //Every restart detects what the new speed will be depending on
  //resistance of the potentiometer.
  changeDutyCycle(ADCread(1));

  while(1)
  {
    //Calls the sensor forever
    drivePart();
  }
}

void drivePart()
{
  int distance = sensorControl();

  //If the robot detects an object to close it will move left away from it
    if (distance < 45.0)
    {
      goLeft();
      delay(600000);
    }
  //Otherwise the robot will move forward and right a bit untill it eventually detects the wall again.
    else
    {
      goFoward();
      //delay 0.1 secs
      delay(600000);
      goRight();
      delay(600000);
    }
}

void goFoward()
{
  //For a wheel to move forward the motor drive need to detect A9 positive and A10 negative, same for the other wheel but A11 positibe and A12 negative.
  GPIOA->ODR &= ~GPIO_ODR_ODR10 & ~GPIO_ODR_ODR12;
  GPIOA->ODR |= GPIO_ODR_ODR9 | GPIO_ODR_ODR11;
}

void goLeft()
{
  //To go left we switch the left wheel to move backwards and right wheel to continue going forward.
  GPIOA->ODR |= GPIO_ODR_ODR10;
  GPIOA->ODR &= ~GPIO_ODR_ODR9;
  GPIOA->ODR &= ~GPIO_ODR_ODR12;
  GPIOA->ODR |= GPIO_ODR_ODR11;
}

```

```
72  void goRight()
73  {
74    //Turning right we put the right wheel to move backwards and the left wheel to move fowards/
75    GPIOA->ODR &= ~GPIO_ODR_ODR10;
76    GPIOA->ODR |= GPIO_ODR_ODR9;
77    GPIOA->ODR |= GPIO_ODR_ODR12;
78    GPIOA->ODR &= ~GPIO_ODR_ODR11;
79  }
```