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#include <Servo.h>
#include <LiquidCrystal.h>

LiquidCrystal lcd(1, 2, 4, 5, 6, 7);

volatile int ServTLpin = 13; //Top Left Servo motor
volatile int ServTRpin = 12; //Top Right Servo motor
volatile int ServBLpin = 11; //Bottom Left Servo Motor
volatile int ServBRpin = 10; //Bottom Right Servo Motor

volatile int buttonTL =A5; //Top Left Button
volatile int buttonTR =8; //Top Right Button
volatile int buttonBL =9; //Bottom left Button
volatile int buttonBR =A0; //Bottom Right Button

volatile int ledTL =A1; //Top Left Button
volatile int ledTR =A2; //Top Right Button
volatile int ledBL =A3; //Bottom left Button
volatile int ledBR =A4; //Bottom Right Button

volatile int moneyPin = 3; //Infrared sensor

Servo ServTL;
Servo ServTR;
Servo ServBL;
Servo ServBR;

int buttonPressed=0;
volatile float moneyInserted=0.0;
volatile float cost=.75;

Servo motor;
int pin = 0;
volatile int motorOn=0;

void setup()
{
  //Set Servo pins to output
  pinMode(ServTLpin, OUTPUT);
  pinMode(ServTRpin, OUTPUT);
  pinMode(ServBLpin, OUTPUT);
  pinMode(ServBRpin, OUTPUT);

  pinMode(buttonTL, INPUT_PULLUP);
  pinMode(buttonTR, INPUT_PULLUP);

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pinMode(buttonBL, INPUT_PULLUP);
pinMode(buttonBR, INPUT_PULLUP);

//Sets led pins to output
pinMode(ledTL, OUTPUT);
pinMode(ledTR, OUTPUT);
pinMode(ledBL, OUTPUT);
pinMode(ledBR, OUTPUT);

pinMode(moneyPin, INPUT_PULLUP);
attachInterrupt(digitalPinToInterrupt(moneyPin), addMoney,FALLING);
//Serial.begin(9600);
lcd.begin(16,2);
sayWelcome();

}

void loop()
{
  if (motorOn== 1 && moneyInserted>=cost )
  {
    runMotor();
    moneyInserted=0;
  }
  checkButtonPressed();
}

void sayWelcome()
{
  lcd.clear();
  lcd.setCursor(0, 0);
  lcd.print("Hello! ");
  lcd.setCursor(0,1);
  delay(2000);
  lcd.print("Pls pick an item");
}

void printLCD()
{
  lcd.clear();
  lcd.setCursor(0, 0);
  lcd.print("Cost: $");
  lcd.print(cost);
  lcd.setCursor(0,1);
  lcd.print("Total: $");
  lcd.print(moneyInserted);
}

```

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}
```

```
void sayThankYou()
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```
{  
  lcd.clear();  
  lcd.setCursor(0, 0);  
  lcd.print("Thank You!");  
  delay(2000);  
  sayWelcome();  
}
```

```
}
```

```
void checkButtonPressed()
```

```
{  
  if (digitalRead(buttonTL)==LOW)  
  {  
    motorOn= 1; //Turns on motor so that motor can be run in loop and not in interrupt  
    motor= ServTL;  
    pin = ServTLpin;  
    digitalWrite(ledTL,HIGH);  
    delay(500);  
    digitalWrite(ledTL,LOW);  
    printLCD();  
  
    Serial.println("Top Left");  
  }  
  
  else if (digitalRead(buttonTR)==LOW)  
  {  
    motorOn= 1; //Turns on motor so that motor can be run in loop and not in interrupt  
    motor= ServTR;  
    pin = ServTRpin;  
    digitalWrite(ledTR,HIGH);  
    delay(500);  
    digitalWrite(ledTR,LOW);  
    printLCD();  
  
    Serial.println("Top Right");  
  }  
  
  else if (digitalRead(buttonBL)==LOW)  
  {  
    motorOn= 1; //Turns on motor so that motor can be run in loop and not in interrupt  
    motor= ServBL;  
    pin = ServBLpin;  
    digitalWrite(ledBL,HIGH);
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    delay(500);
    digitalWrite(ledBL,LOW);
    printLCD();
    Serial.println("Bottom Left");
}

else if (digitalRead(buttonBR)==LOW)
{
    motorOn= 1; //Turns on motor so that motor can be run in loop and not in interrupt
    motor= ServBR;
    pin = ServBRpin;
    digitalWrite(ledBR,HIGH);
    delay(500);
    digitalWrite(ledBR,LOW);
    printLCD();
    Serial.println("Bottom Right");
}

//printLCD();
}
void runMotor()
{
    int e=10; // error

    motor.attach(pin);

    motor.write(300);
    delay(1000);
    motor.detach();
    motorOn=0;
    sayThankYou();
}

void addMoney()
{
    Serial.println("Infrared");
    moneyInserted= moneyInserted+.25;
    printLCD();
}

```