```
/************************************************************
 Arduino Pin  APDS-9960 Board  Function

 3.3V        VCC            Power
 GND         GND            Ground
 A4          SDA            I2C Data
 A5          SCL            I2C Clock
 2           INT            Interrupt
************************************************************/

#include <Wire.h>
#include <SparkFun_APDS9960.h>
#include <LiquidCrystal_I2C.h>  // For I2C LCDs

#define APDS9960_INT  2 // Interrupt pin
SparkFun_APDS9960 apds = SparkFun_APDS9960();
LiquidCrystal_I2C lcd(0x27, 16, 2);  // I2C address might be 0x27 or 0x3F

int isr_flag = 0;
char* myMenu[] = {"WELCOME", "FAN "}; // Menu: Welcome screen, Fan control
int FAN = 9;                        // Pin for Fan
int fanState = 0;
int i = 2, j = 0, k = 0;
int pos = 1;

byte left[8] = {
  0b10000, 0b11000, 0b11100, 0b11110,
  0b11110, 0b11100, 0b11000, 0b10000
};

byte right[8] = {
  0b00001, 0b00011, 0b00111, 0b01111,
  0b01111, 0b00111, 0b00011, 0b00001
};

void setup() {
  pinMode(FAN, OUTPUT);
  pinMode(APDS9960_INT, INPUT);

  digitalWrite(FAN, LOW);

  Serial.begin(9600);
  lcd.init();
  lcd.backlight();
  lcd.createChar(0, left);
  lcd.createChar(1, right);

  // Initial welcome
  lcd.setCursor(0, 0);
  lcd.print("Project For YOU");
  lcd.setCursor(0, 1);
  lcd.print("   WEL-COME    ");
```

```
Serial.println(F("SparkFun APDS-9960 - GestureTest"));

attachInterrupt(digitalPinToInterrupt(APDS9960_INT), interruptRoutine, FALLING);

if (apds.init()) {
  Serial.println(F("APDS-9960 init OK"));
} else {
  Serial.println(F("APDS-9960 init FAIL"));
}

if (apds.enableGestureSensor(true)) {
  Serial.println(F("Gesture sensor is running"));
} else {
  Serial.println(F("Gesture sensor failed to start"));
}

// Wait for gesture to start
while (pos == 1) {
  if (apds.isGestureAvailable()) {
    int g = apds.readGesture();
    if (g != DIR_NONE) {
      lcd.clear();
      delay(500);
      pos = 2;
      break;
      }
    }
    delay(100);
  }
}

void loop() {
  if (isr_flag == 1) {
    detachInterrupt(digitalPinToInterrupt(APDS9960_INT));
    handleGesture();
    isr_flag = 0;
    attachInterrupt(digitalPinToInterrupt(APDS9960_INT), interruptRoutine, FALLING);
    controlAppliances();
  }

  i = 2;
  k = 0;

  // Display menu
  if (j == 0) {
    lcd.setCursor(0, 0);
    lcd.print("Project For YOU");
    lcd.setCursor(0, 1);
    lcd.print("    WEL-COME    ");
  } else if (j == 1) {
    lcd.setCursor(0, 0);
    lcd.print("Project For YOU");
    lcd.setCursor(6, 1);
    lcd.print("FAN ");
  }

  // Arrow navigation indicators
  if (j < 1) lcd.setCursor(11, 1), lcd.write(byte(0));
  else lcd.setCursor(11, 1), lcd.print(" ");

  if (j > 0) lcd.setCursor(5, 1), lcd.write(byte(1));
  else lcd.setCursor(5, 1), lcd.print(" ");
}

void interruptRoutine() {
  isr_flag = 1;
}

void controlAppliances() {
  // Only Fan is controllable
  if (j == 1 && i == 1 && fanState == 0) { digitalWrite(FAN, LOW); fanState = 1; }
  if (j == 1 && i == 0 && fanState == 1) { digitalWrite(FAN, HIGH); fanState = 0; }
}

void handleGesture() {
  if (apds.isGestureAvailable()) {
    switch (apds.readGesture()) {
```

```
   case DIR_UP:

    Serial.println("UP"); i = 0; break;

   case DIR_DOWN:

    Serial.println("DOWN"); i = 1; break;

   case DIR_LEFT:

    Serial.println("LEFT"); if (j > 0) j--; break;

   case DIR_RIGHT:

    Serial.println("RIGHT"); if (j < 1) j++; break;

   case DIR_NEAR:

    Serial.println("NEAR"); k = 1; break;

   case DIR_FAR:

    Serial.println("FAR"); k = 2; break;

   default:

    Serial.println("NONE"); k = 3; break;

  }

 }

}
```