```
#include<SoftwareSerial.h>
SoftwareSerial Serial1(2,3);
#include<LiquidCrystal.h>
LiquidCrystal lcd(14,15,16,17,18,19);
int led=12;
int flag=0;
String str="";
#define sensor 7
void setup()
{
  lcd.begin(16,2);
  Serial1.begin(9600);
  Serial.begin(9600);
  pinMode(led, OUTPUT);
  pinMode(sensor, INPUT_PULLUP);
  lcd.print("Smart AC system");
  lcd.setCursor(4,1);
  delay(5000);
  lcd.clear();
  lcd.print("Welcome");
  lcd.setCursor(0,1);
  lcd.print("Hi!!!!");
  delay(5000);
  gsmInit();
  lcd.clear();
  lcd.print("Air Monitor System Ready");
}
void loop()
{

    lcd.setCursor(0,0);
```

```
  lcd.print("activate Mode    ");
  if(digitalRead(sensor)==1 && flag==0)
  {
   delay(1000);
   if(digitalRead(sensor)==1)
   {
     digitalWrite(led, LOW);
     sendSMS("Air Quality is Normal. Security system turned OFF");
     lcd.begin(16,2);
     lcd.setCursor(0,1);
     lcd.print("Alarm off   ");
     delay(2000);
     flag=1;
   }
  }
  else if(digitalRead(sensor)==0 && flag==1)
  {
   delay(1000);
   if(digitalRead(sensor)==0)
   {
     digitalWrite(led, HIGH);
     sendSMS("Alert, gas leakage detected. Security system turned ON");
     lcd.begin(16,2);
     lcd.print("Alarm on");
     lcd.setCursor(0,1);
     lcd.print("Alarm On");
     delay(2000);
     flag=0;
   }
  }
}
```

```
void sendSMS(String msg)
{
  lcd.clear();
  lcd.print("Sending SMS");
  Serial1.println("AT+CMGF=1");
  delay(500);
  Serial1.print("AT+CMGS=");
  Serial1.print('"');
  Serial1.print("+91xxxxxxxxxx");    // number
  Serial1.print('"');
  Serial1.println();
  delay(500);
  Serial1.println(msg);
  delay(500);
  Serial1.write(26);
  delay(1000);
  lcd.clear();
  lcd.print("SMS Sent");
  delay(1000);
  lcd.begin(16,2);
}
void gsmInit()
{
  lcd.clear();
  lcd.print("Finding Module..");
  boolean at_flag=1;
  while(at_flag)
  {
    Serial1.println("AT");
    while(Serial1.available()>0)
    {
```

```
    if(Serial1.find("OK"))
    at_flag=0;
   }
   delay(1000);
  }
  Serial1.println("ATE0");
  lcd.clear();
  lcd.print("Finding Network..");
  boolean net_flag=1;
  while(net_flag)
  {
   Serial1.println("AT+CPIN?");
   while(Serial1.available()>0)
   {
    if(Serial1.find("READY"))
    net_flag=0;
    break;
   }
   delay(1000);
  }
   Serial1.println("AT+CNMI=2,2,0,0,0");
   delay(1000);
   Serial1.println("AT+CMGF=1");
   delay(1000);
   Serial1.println("AT+CSMP=17,167,0,0");
   lcd.clear();
   Serial1.flush();
}
```