```
#include <LiquidCrystal.h>
LiquidCrystal lcd(8, 9, 10, 11, 12, 13);//rs,en,data pins d4 -d7

#include<EEPROM.h>

#define BULB 7

int temp=0,i=0;
int led=5;
char str[15];

int balance=0;
int balance1=0;
int balance2=0;

const int SW1=A0;
int SWalert1=1;

int PULSE=0;
int aa=0;
int bb=0;
int cc=0;
void setup()
{
lcd.begin(16,2);
Serial.begin(9600);
pinMode(led, INPUT);
pinMode(BULB, OUTPUT);
digitalWrite(BULB, HIGH); delay (500);
lcd.clear();
```

```
lcd.setCursor(0,0);
lcd.print("  PREPAID   ");
lcd.setCursor(0,1);
lcd.print("ENERGY METER");
delay(3000);


lcd.clear();
lcd.setCursor(0,0);
lcd.print("USING GSM   ");
lcd.setCursor(0,1);
lcd.print("AND ARDUINO ");
delay(3000);
digitalWrite(BULB, HIGH); delay (500);
lcd.clear();
gsm_init();
lcd.clear();
lcd.setCursor(0,0);
lcd.print("GSM MODEM OK");
lcd.setCursor(0,1);
lcd.print("System Ready");
lcd.clear();
delay(2000);


lcd.clear();
lcd.setCursor(0,0);
lcd.print("B:");
lcd.setCursor(3,0);
balance1=EEPROM.read(0);
lcd.print(balance1);
delay(2000);
```

```
lcd.clear();
}

void loop()
{

SWalert1 = digitalRead(SW1);
if (SWalert1 == LOW)
{
lcd.setCursor(10,0);
lcd.print("P:");
lcd.setCursor(12,0);
lcd.print(PULSE);
if(PULSE==10)
{
balance1=balance1-1;
PULSE=0;
balance2=balance1;
lcd.setCursor(0,0);lcd.print("UNITS:         ");
balance2=balance2/5;
lcd.setCursor(6,0);lcd.print(balance2);
lcd.setCursor(0,1);lcd.print("BALANCE=       ");
lcd.setCursor(9,1);lcd.print(balance1);
EEPROM.write(0, balance1);
}
else
{
PULSE=PULSE+1;
delay(100);
}
```

```
}

if(balance1==0)
{
cc=cc+1;
if(cc==2)
{
digitalWrite(BULB, HIGH); delay (500);
lcd.clear();
lcd.setCursor(0,0);
lcd.print("UNITS:0");
lcd.setCursor(0,11);
lcd.print("BALANCE=0");
delay(2000);
Serial.println("AT+CMGS=\"7083476286\"");delay(500);
Serial.println("\n");delay(100);
Serial.println("  NO BALANCE  ");delay(100);
Serial.println("  POWER CUT   ");delay(100);
Serial.write(26);delay(100);
Serial.print("AT\r\n");delay(1000);
Serial.print("AT+CMGD=1\r\n");delay(1000);lcd.clear();
aa=0;bb=0;
}
}

if(balance1>=1)
{
aa=aa+1;
```

```
if(aa==2)
{
digitalWrite(BULB, LOW); delay (2000);
}
}
if(balance1<=0)
{
balance1=0;
EEPROM.write(0, balance1);
}

if(balance1==10)
{
bb=bb+1;
if(bb==2)
{
Serial.println("AT+CMGS=\"7083476286\"");delay(500);
Serial.println("\n");delay(100);
Serial.println(" LOW BALANCE  ");delay(100);
Serial.println("  PLZ RECHARGE   ");delay(100);
Serial.write(26);delay(100);
Serial.print("AT\r\n");delay(1000);
Serial.print("AT+CMGD=1\r\n");delay(1000);lcd.clear();
}
}




if(temp==1)
{
```

```
check();
temp=0;
i=0;
delay(200);
}
}

void serialEvent()
{
while(Serial.available())
{
if(Serial.find("#S."))
{
digitalWrite(led, HIGH);
delay(1000);
digitalWrite(led, LOW);
while (Serial.available())
{
char inChar=Serial.read();
str[i++]=inChar;
if(inChar=='*')
{
temp=1;
return;
}
}
}
}
}
////////////////////////////////////////////////////////////////////////////////////////////////////////////////////////////////
```

```
void gsm_init()

{

lcd.clear();lcd.print("GSM TESTING..");

boolean
at_flag=1;while(at_flag){Serial.println("AT");while(Serial.available()>0){if(Serial.find("OK"))at_flag=0;}delay
(1000);}

lcd.clear();lcd.print("GSM CONNECTED");delay(1000);lcd.clear();

////////////////////////////////////////////////////////////////////////////////////////////////

lcd.print("ECHO");

boolean echo_flag=1;

while(echo_flag)

{Serial.println("ATE0"); while(Serial.available()>0){if(Serial.find("OK"))echo_flag=0;}delay(1000);}

lcd.clear();  lcd.print("Echo OFF");delay(1000);lcd.clear();

////////////////////////////////////////////////////////////////////////////////////////////////

lcd.print("Finding Network..");

boolean net_flag=1;while(net_flag){Serial.println("AT+CPIN?");

while(Serial.available()>0){if(Serial.find("+CPIN: READY"))net_flag=0;}delay(1000);}

lcd.clear();lcd.print("Network Found..");

////////////////////////////////////////////////////////////////////////////////////////////////

lcd.setCursor(0,1);lcd.print("GSM NETWORK OK");delay(2000);lcd.clear();

//////////////////////////////////////////////////////////////////////////

lcd.clear();lcd.print("TEST MESS");

boolean test_flag=1;while(test_flag){Serial.println("AT+CMGF=1");

while(Serial.available()>0){if(Serial.find("OK"))test_flag=0;}delay(1000);}

lcd.clear();lcd.print("TEST MESSAGE");delay(1000);

////////////////////////////////////////////////////////////////////////////////////////////////

lcd.clear();lcd.print("AT+CMGD=1,4");

boolean test1_flag=1;while(test1_flag){Serial.println("AT+CMGD=1,4");

while(Serial.available()>0){if(Serial.find("OK"))test1_flag=0;}delay(1000);}

lcd.clear();lcd.print("DELETE ALL MESSAGES");delay(1000);

////////////////////////////////////////////////////////////////////////////////////////////////
```

```
lcd.clear();lcd.print("AT+CNMI=2,2,0,0,0");
boolean test2_flag=1;while(test2_flag){Serial.println("AT+CNMI=2,2,0,0,0");
while(Serial.available()>0){if(Serial.find("OK"))test2_flag=0;}delay(1000);}
lcd.clear();lcd.print("DELETE ALL MESSAGES");delay(1000);
////////////////////////////////////////////////////////////////////////////////////////////////////
}

void check()
{
//////////////////////////////////////////////////
if(!(strncmp(str,"RC100",5)))
{
balance=100;PULSE=0;
aa=0;bb=0;cc=0;
balance1=balance+balance1;
EEPROM.write(0, balance1);
lcd.clear();
lcd.setCursor(0,0);
lcd.print("POWER ON");
lcd.setCursor(0,1);
lcd.print("RECHARGE=100RS");
delay(1000);
Serial.println("AT+CMGS=\"7083476286\"");delay(500);
Serial.println("\n");delay(100);
Serial.println("  RECHARGE   ");delay(100);
Serial.println("  AMOUNT IS 100RS  ");delay(100);
Serial.write(26);delay(100);
Serial.print("AT\r\n");delay(1000);
Serial.print("AT+CMGD=1\r\n");delay(1000);lcd.clear();
}
```

```
//////////////////////////////////////////////////////
if(!(strncmp(str,"RC200",5)))
{
balance=200;PULSE=0;
aa=0;bb=0;cc=0;
balance1=balance+balance1;
EEPROM.write(0, balance1);
lcd.clear();
lcd.setCursor(0,0);
lcd.print("POWER ON");
lcd.setCursor(0,1);
lcd.print("RECHARGE=200RS");
delay(1000);
Serial.println("AT+CMGS=\"7083476286\"");delay(500);
Serial.println("\n");delay(100);
Serial.println("  RECHARGE   ");delay(100);
Serial.println("  AMOUNT IS 200RS  ");delay(100);
Serial.write(26);delay(100);
Serial.print("AT\r\n");delay(1000);
Serial.print("AT+CMGD=1\r\n");delay(1000);lcd.clear();
}
//////////////////////////////////////////////////////
if(!(strncmp(str,"RC300",5)))
{
balance=300;PULSE=0;
aa=0;bb=0;cc=0;
balance1=balance+balance1;
EEPROM.write(0, balance1);
lcd.clear();
lcd.setCursor(0,0);
```

```
lcd.print("POWER ON");

lcd.setCursor(0,1);

lcd.print("RECHARGE=300RS");

delay(1000);

Serial.println("AT+CMGS=\"7083476286\"");delay(500);

Serial.println("\n");delay(100);

Serial.println("  RECHARGE   ");delay(100);

Serial.println("  AMOUNT IS 300RS  ");delay(100);

Serial.write(26);delay(100);

Serial.print("AT\r\n");delay(1000);

Serial.print("AT+CMGD=1\r\n");delay(1000);lcd.clear();

}

//////////////////////////////////////////////////////

}
```