```
#include <LiquidCrystal.h>
#include <SoftwareSerial.h>
#include <EEPROM.h>
#include "RTClib.h"
#include "Adafruit_Fingerprint.h"

LiquidCrystal lcd(13,12,11,10,9,8);
SoftwareSerial fingerPrint(2, 3);
RTC_DS1307 rtc;
uint8_t id;
Adafruit_Fingerprint finger = Adafruit_Fingerprint(&fingerPrint);

#define enroll 14
#define del 15
#define up 16
#define down 17
#define match 5
#define indFinger 7
#define buzzer 5
#define records 4

int user1, user2, user3, user4, user5;
DateTime now;

void setup() {
    delay(1000);
    lcd.begin(16,2);
    Serial.begin(9600);

    pinMode(enroll, INPUT_PULLUP);
    pinMode(up, INPUT_PULLUP);
    pinMode(down, INPUT_PULLUP);
    pinMode(del, INPUT_PULLUP);
    pinMode(match, INPUT_PULLUP);
    pinMode(buzzer, OUTPUT);
    pinMode(indFinger, OUTPUT);
    digitalWrite(buzzer, LOW);

    if (digitalRead(enroll) == 0) {
        digitalWrite(buzzer, HIGH);
        delay(500);
        digitalWrite(buzzer, LOW);
        lcd.clear();
        lcd.print("Please wait");
        lcd.setCursor(0,1);
        lcd.print("Downloading Data");
        Serial.println("Please wait");
```

```
        Serial.println("Downloading Data..");

        Serial.print("S.No. ");
        for(int i = 0; i < records; i++) {
            digitalWrite(buzzer, HIGH);
            delay(500);
            digitalWrite(buzzer, LOW);
            Serial.print(" User ID");
            Serial.print(i + 1);
            Serial.print(" ");
        }
        Serial.println();

        int eepIndex = 0;
        for(int i = 0; i < 30; i++) {
            if(i+1 < 10) Serial.print('0');
            Serial.print(i + 1);
            Serial.print(" ");
            eepIndex = (i * 7);
            download(eepIndex);
            eepIndex = (i * 7) + 210;
            download(eepIndex);
            eepIndex = (i * 7) + 420;
            download(eepIndex);
            eepIndex = (i * 7) + 630;
            download(eepIndex);
            Serial.println();
        }
    }

    if (digitalRead(del) == 0) {
        lcd.clear();
        lcd.print("Please Wait");
        lcd.setCursor(0,1);
        lcd.print("Resetting.....");
        for(int i = 1000; i < 1005; i++) EEPROM.write(i,0);
        for(int i = 0; i < 841; i++) EEPROM.write(i, 0xff);
        lcd.clear();
        lcd.print("System Reset");
        delay(1000);
    }

    lcd.clear();
    lcd.print(" Attendance ");
    lcd.setCursor(0,1);
    lcd.print(" System ");
    delay(2000);
    lcd.clear();
```

```
    lcd.print("Circuit Digest");
    lcd.setCursor(0,1);
    lcd.print("Saddam Khan");
    delay(2000);
    digitalWrite(buzzer, HIGH);
    delay(500);
    digitalWrite(buzzer, LOW);
}

void loop() {
    now = rtc.now();
    lcd.setCursor(0,0);
    lcd.print("Time->");
    lcd.print(now.hour(), DEC);
    lcd.print(':');
    lcd.print(now.minute(), DEC);
    lcd.print(':');
    lcd.print(now.second(), DEC);
    lcd.setCursor(0,1);
    lcd.print("Date->");
    lcd.print(now.day(), DEC);
    lcd.print('/');
    lcd.print(now.month(), DEC);
    lcd.print('/');
    lcd.print(now.year(), DEC);
    delay(500);

    int result = getFingerprintIDez();
    if(result > 0) {
        digitalWrite(indFinger, LOW);
        digitalWrite(buzzer, HIGH);
        delay(100);
        digitalWrite(buzzer, LOW);
        lcd.clear();
        lcd.print("ID:");
        lcd.print(result);
        lcd.setCursor(0,1);
        lcd.print("Please Wait....");
        delay(1000);
        attendance(result);
        lcd.clear();
        lcd.print("Attendance ");
        lcd.setCursor(0,1);
        lcd.print("Registered");
        delay(1000);
        digitalWrite(indFinger, HIGH);
        return;
    }
```

```
    checkKeys();
    delay(300);
}

void attendance(int id) {
    int user = 0, eepLoc = 0;
    if(id == 1) {
        eepLoc = 0; user = user1++;
    } else if(id == 2) {
        eepLoc = 210; user = user2++;
    } else if(id == 3) {
        eepLoc = 420; user = user3++;
    } else if(id == 4) {
        eepLoc = 630; user = user4++;
    } else return;

    int eepIndex = (user * 7) + eepLoc;
    EEPROM.write(eepIndex++, now.hour());
    EEPROM.write(eepIndex++, now.minute());
    EEPROM.write(eepIndex++, now.second());
    EEPROM.write(eepIndex++, now.day());
    EEPROM.write(eepIndex++, now.month());
    EEPROM.write(eepIndex++, now.year() >> 8);
    EEPROM.write(eepIndex++, now.year());

    EEPROM.write(1000, user1);
    EEPROM.write(1001, user2);
    EEPROM.write(1002, user3);
    EEPROM.write(1003, user4);
}

void checkKeys() {
    if(digitalRead(enroll) == 0) {
        lcd.clear();
        lcd.print("Please Wait");
        delay(1000);
        while(digitalRead(enroll) == 0);
        Enroll();
    } else if(digitalRead(del) == 0) {
        lcd.clear();
        lcd.print("Please Wait");
        delay(1000);
        delet();
    }
}
```