T.C.
MANİSA CELAL BAYAR UNIVERSITY

FACULTY OF ENGINEERING AND NATURAL SCIENCES

Departmen Of Electrical And Electronics Engineering

ELECTRICAL AND ELECTRONICS ENGINEERING COMPUTER ENGINEERING INTERDISCIPLINARY PROJECT REPORT

TEAM - 4

Electrical And Electronics Engineering
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Computer Engineering
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MANİSA

ENCRYPTED DOOR LOCK PROJECT

1- Project Information

2- Project Scenario

3- Team Task Distribution / Roles

4- Material List

5- Circuit Design

6- Simulation Drawing

7- Printed Circuit Diagram

8- Visuals of All Project Stages

9- Photos of the Working Project

10- Meeting Minutes

PROJECT INFORMATION

Our goal in this project is to create a password entry and control system using a keypad and an LCD screen with the PIC16F877 microcontroller. The primary function of the system is to allow the user to enter a password and compare this password with a predefined one. If the correct password is entered, a "Welcome" message is displayed on the screen. If an incorrect password is entered, a "Wrong Password" message is displayed on the screen.

PROJECT SCENARIO

The predefined password is entered into the code. Initially, this password is set to "0000". Then, the user enters the password. If the password is correct, a "Welcome" message is displayed on the screen. If the password is incorrect, a "Wrong Password" message is displayed on the screen. When the "#" key is pressed, the program terminates.

TEAM TASK DISTRIBUTION / ROLES

In determining the project topic, students from both electrical-electronics engineering and computer engineering collaborated and contributed to the selection of the project topic. Electrical-electronics engineering students were responsible for tasks such as preparing the electronic circuit design for the project, creating the list of materials to be used in the designed circuit, drawing the simulation in Proteus, preparing the printed circuit diagram of the electronic circuit, and finally assembling the project materials to build the project in real life. Computer engineering students, on the other hand, took part in steps such as writing the code to be embedded in the microcontroller based on the information received from the electrical-electronics engineering students, running the codes in the simulation environment, verifying that the project works, and embedding the written codes into the microcontroller.

Project Planning : Emre Can Öztürk, Behaiddin Eray Gedioğlu, Salim Elçi, Orkun Altınyelken, Baran Çakmak Demir, Ali Tunçer

Electronic Design and Implementation: Emre Can Öztürk, Behaiddin Eray Gedioğlu, Salim Elçi

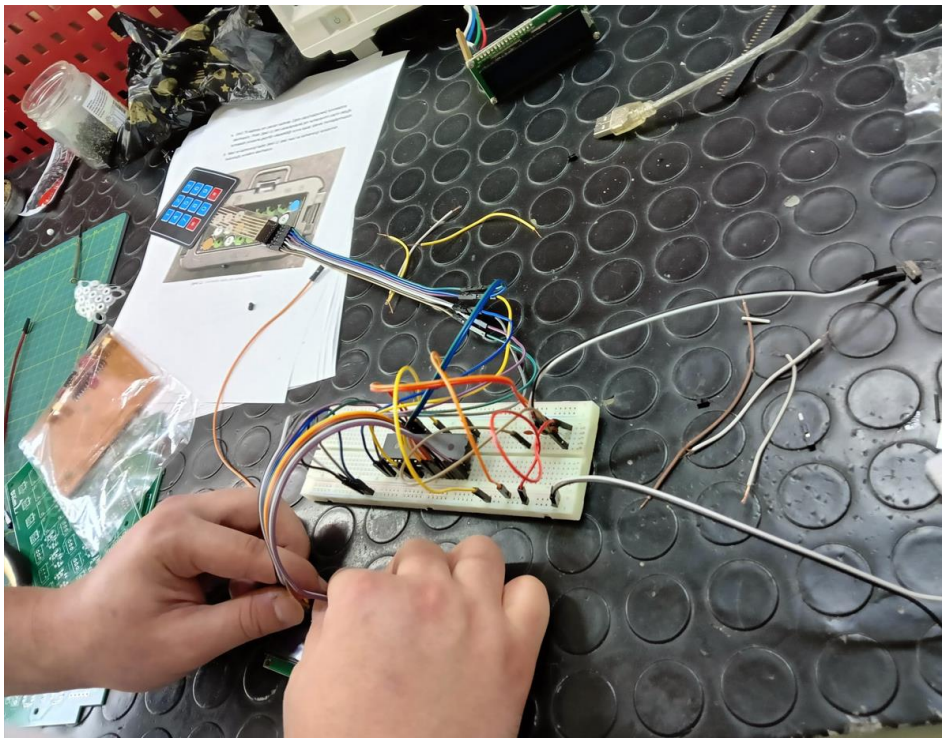
Software Development: Orkun Altınyelken, Baran Çakmak Demir, Ali Tunçer

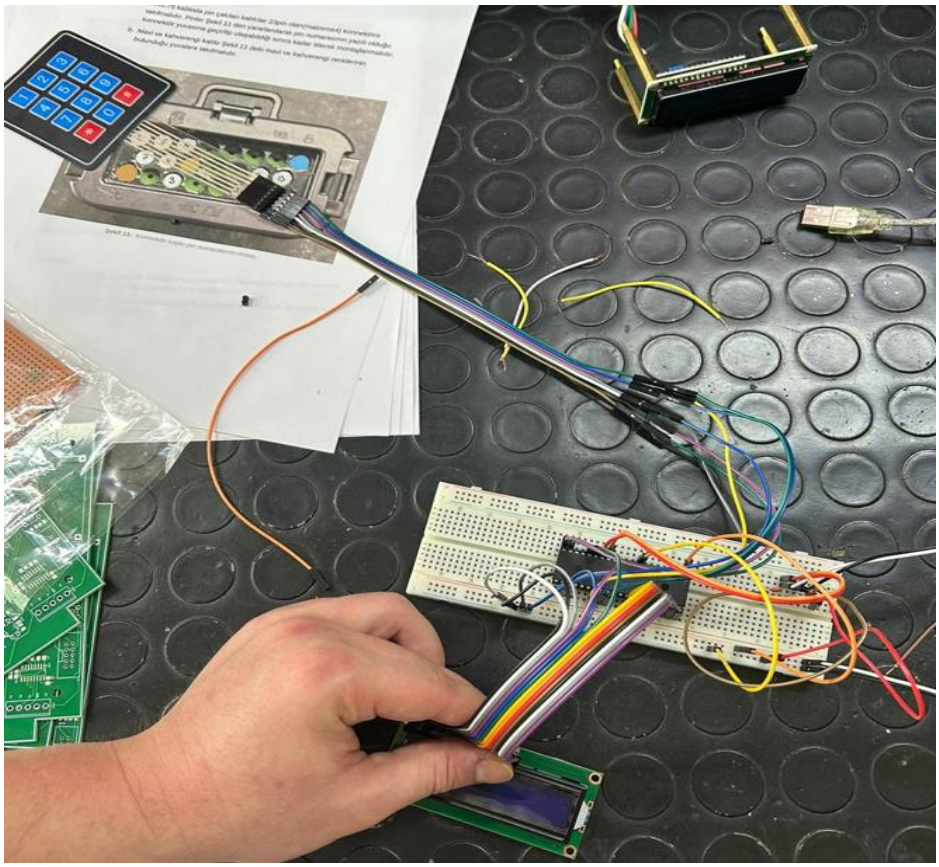
Reporting: Baran Çakmak Demir, Behaiddin Eray Gedioğlu

MATERIAL LIST

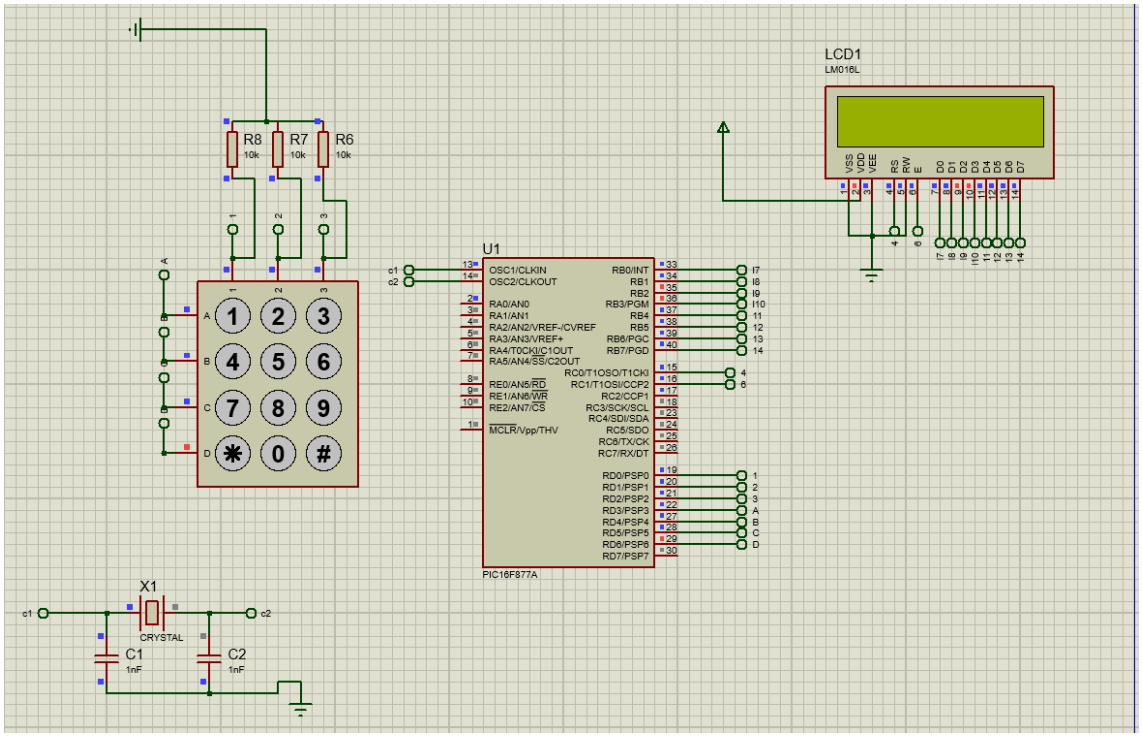
- Pic16f877A
- 1 piece of 4x3 keypad
- Lm016l lcd
- 1 Crystal
- 4 pieces of 1nf capacitor
- 3 pieces of 10k resistor
- Female-Male Cable
- Female-Female Cable
- Capacitor
- Header

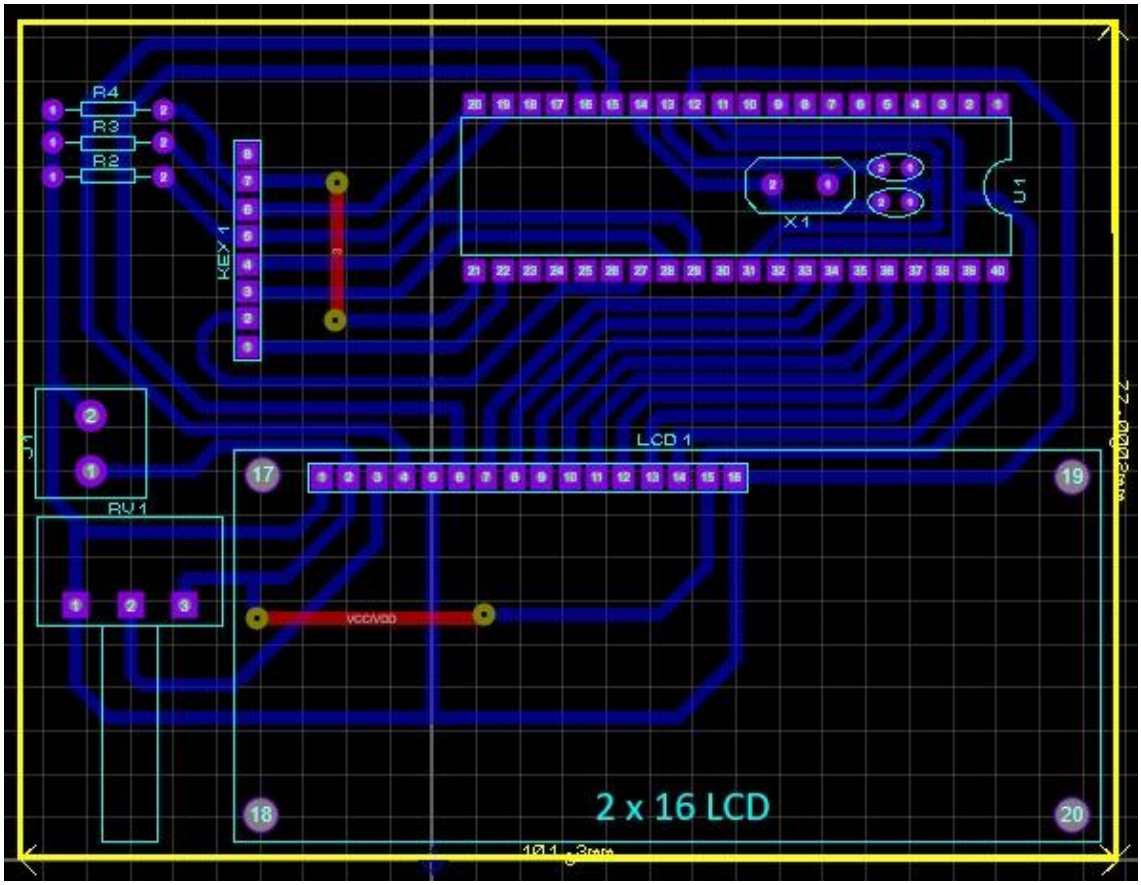
CIRCUIT DESIGN



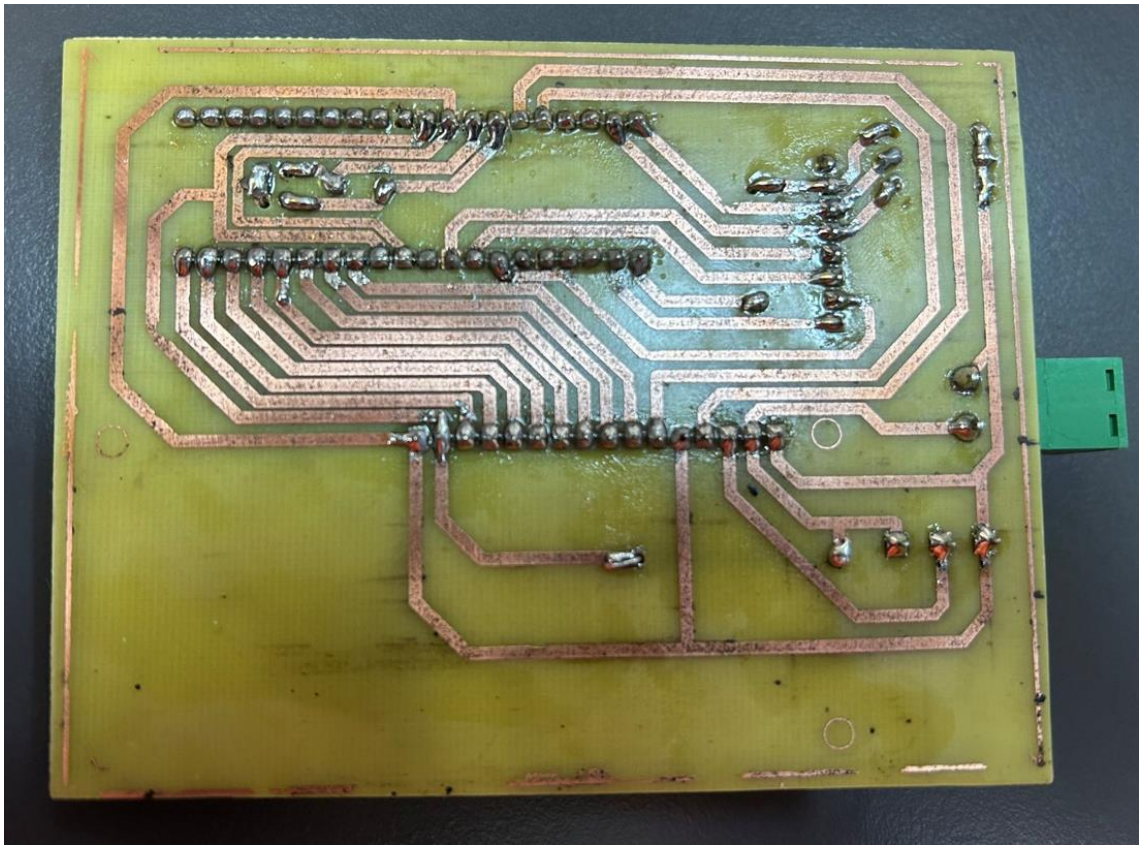


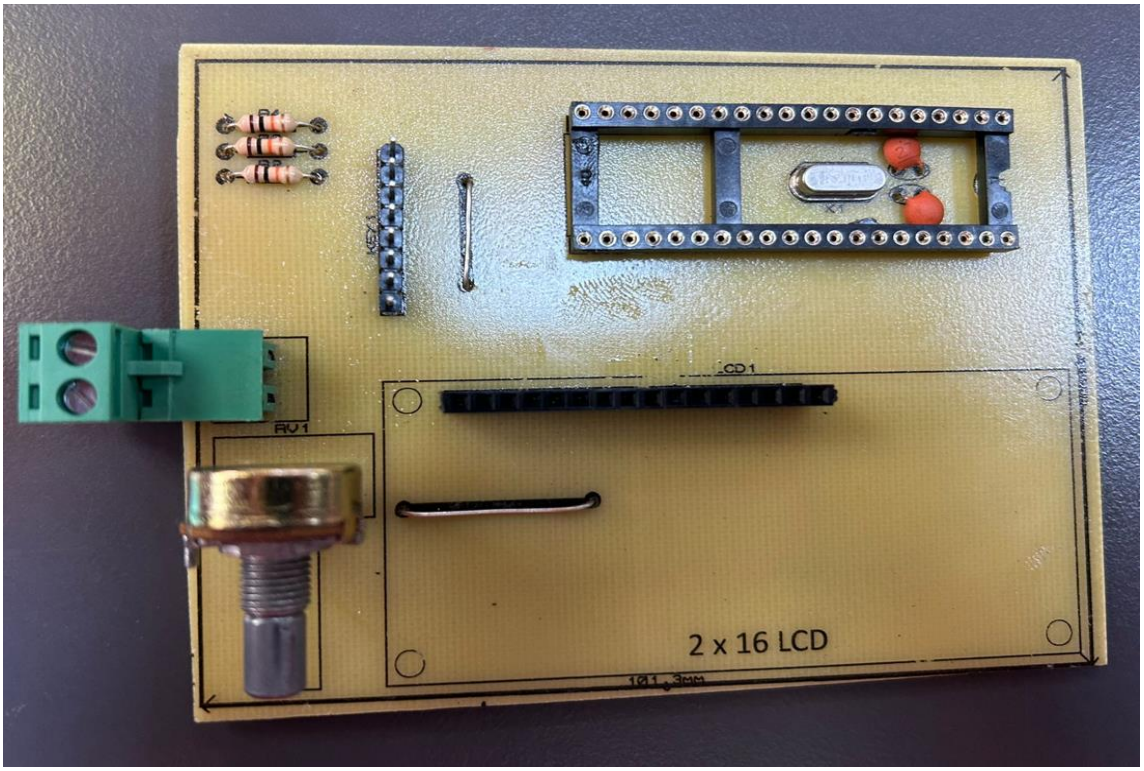
SIMULATION DRAWING



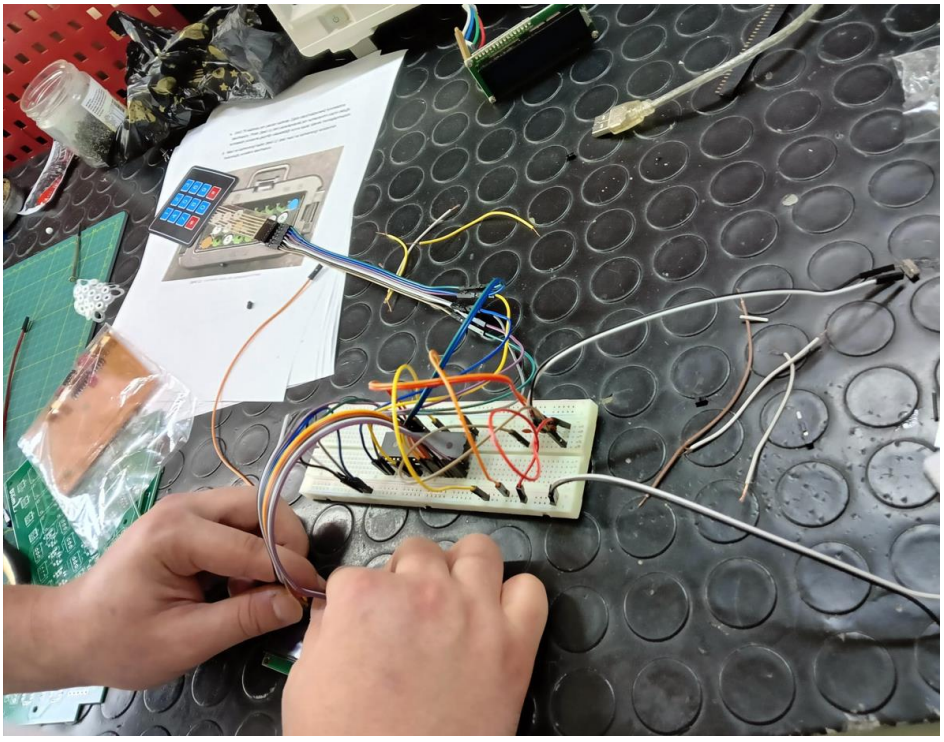


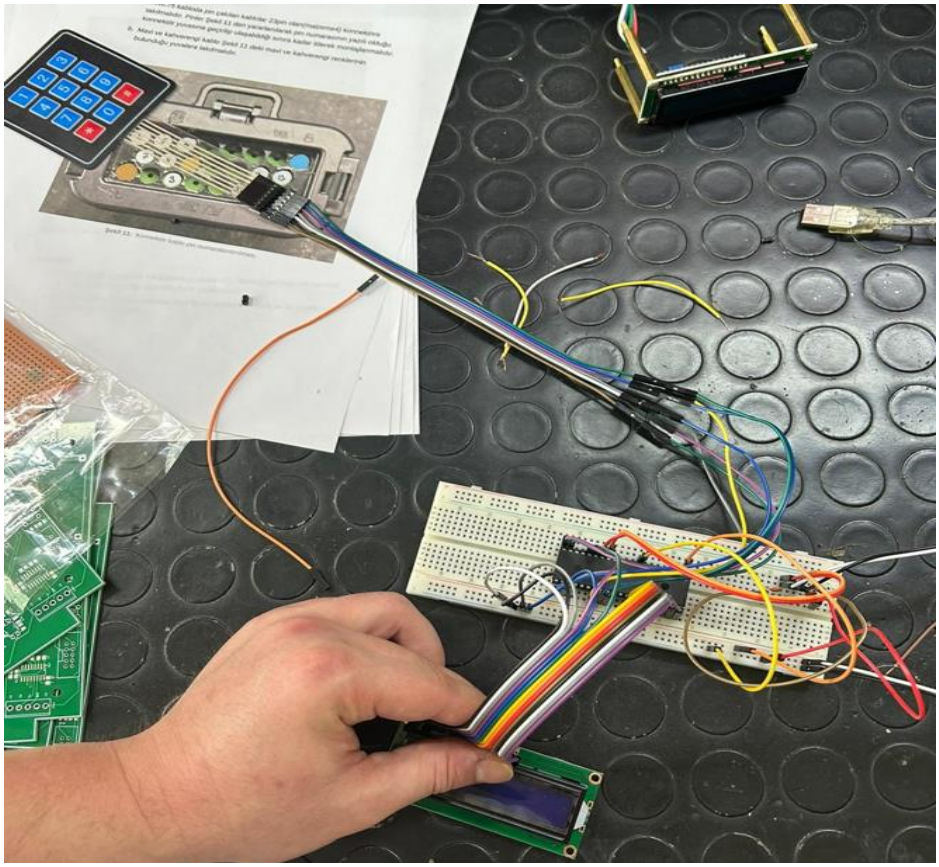
PRINTED CIRCUIT DIAGRAM

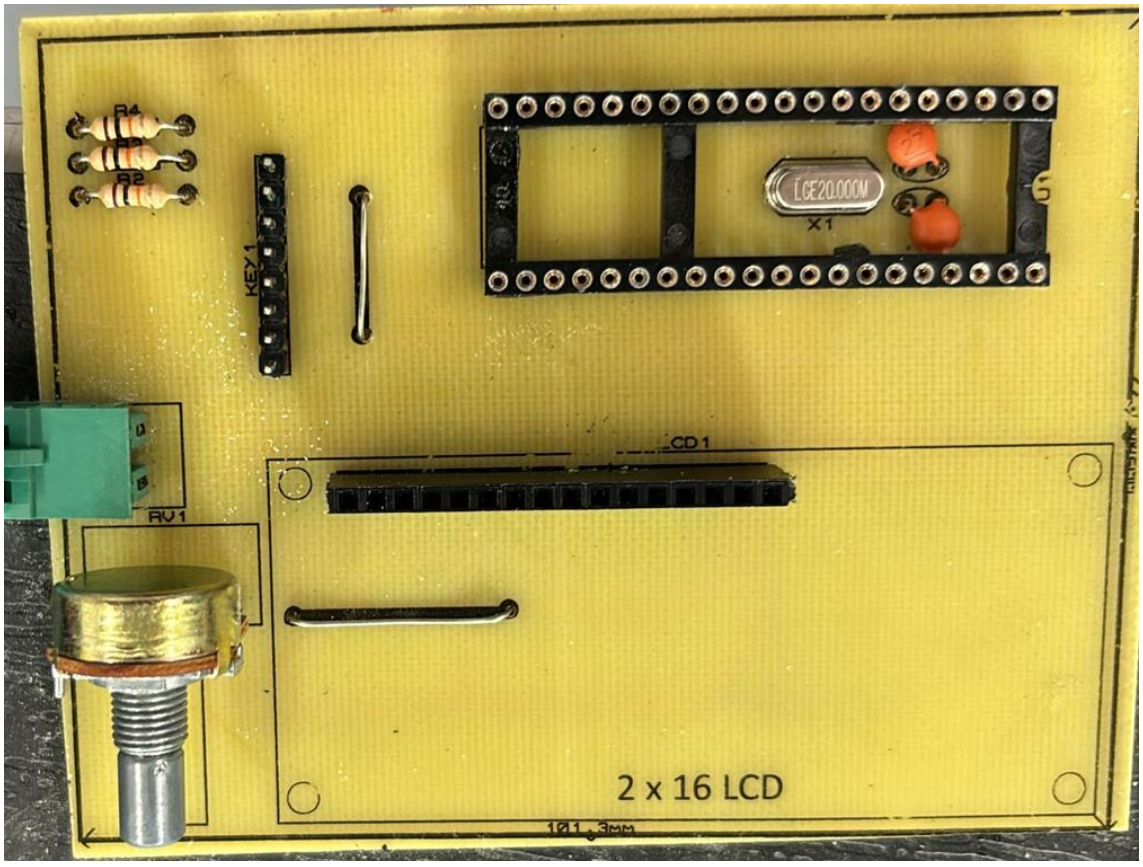



RV1
LCD1
2 x 16 LCD

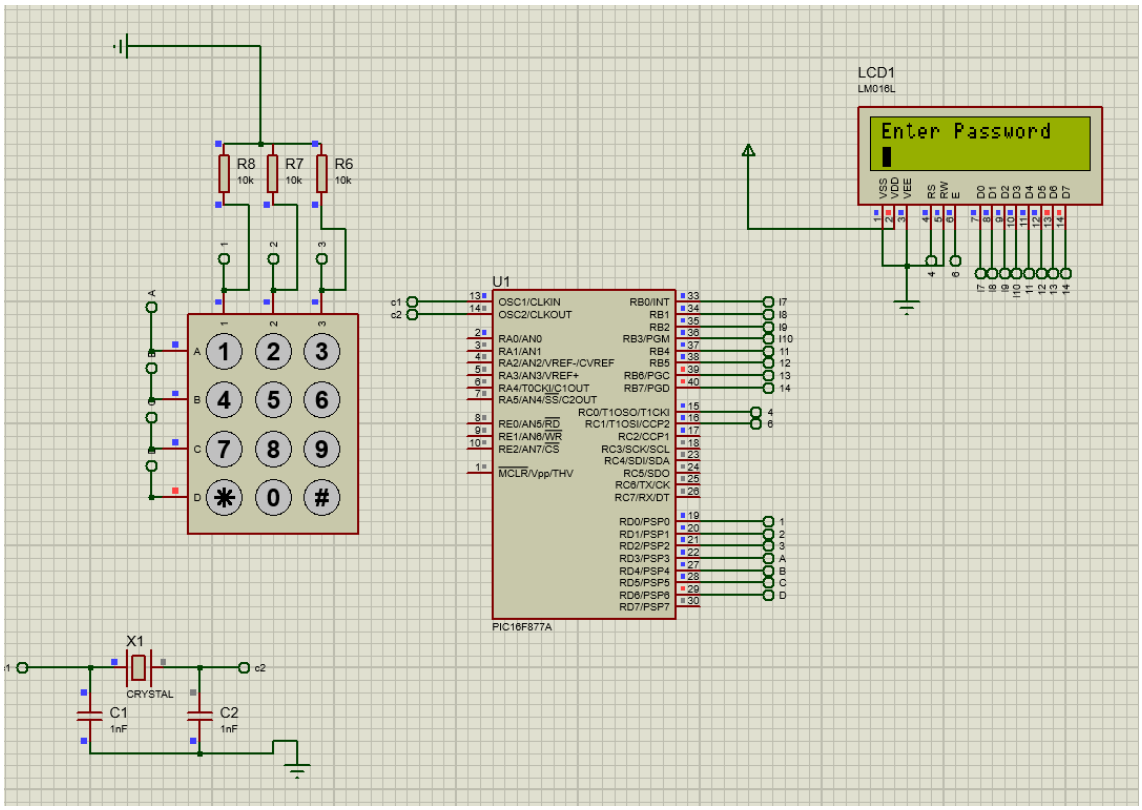
VISUALS OF ALL PROJECT STAGES

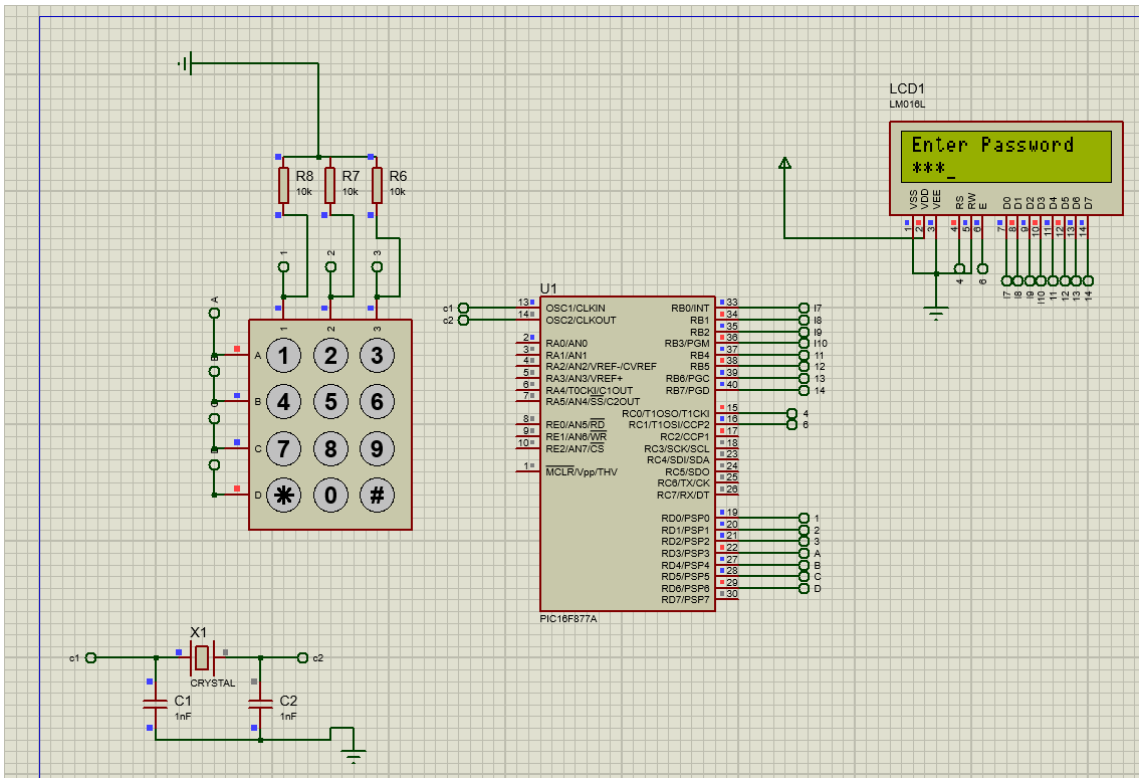


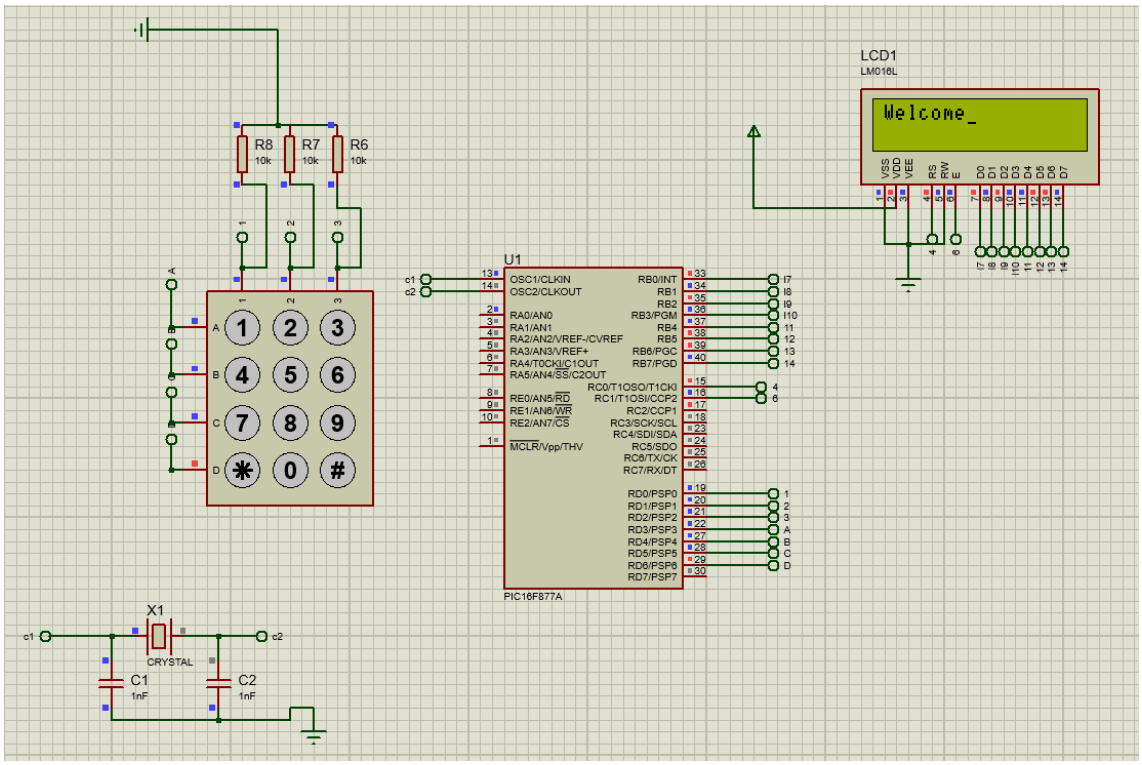



R1
R2
KEY1
LCE20.000M
X1
RV1
LCD1
2 x 16 LCD

PHOTOS OF THE WORKING PROJECT






LCD1
LM016L
Welcome_
VSS
VDD
VEE
RS
RW
E
D0
D1
D2
D3
D4
D5
D6
D7
R8
10k
R7
10k
R6
10k
U1
OSC1/CLKIN
OSC2/CLKOUT
RA0/AN0
RA1/AN1
RA2/AN2/VREF-/CVREF
RA3/AN3/VREF+
RA4/T0CKI/C1OUT
RA5/AN4/SS/C2OUT
RE0/AN5/RD
RE1/AN6/WR
RE2/AN7/CS
MCLR/Vpp/THV
RB0/INT
RB1
RB2
RB3/PGM
RB4
RB5
RB6/PGC
RB7/PGD
RC0/T1OSO/T1CKI
RC1/T1OSI/CCP2
RC2/CCP1
RC3/SCK/SCL
RC4/SDI/SDA
RC5/SDO
RC6/TX/CK
RC7/RX/DT
RD0/PSP0
RD1/PSP1
RD2/PSP2
RD3/PSP3
RD4/PSP4
RD5/PSP5
RD6/PSP6
RD7/PSP7
PIC16F877A
X1
CRYSTAL
C1
1nF
C2
1nF
c1
c2

MEETING MINUTES

1. MEETING MINUTES AND DECISIONS

Team Leader: Emre Can Öztürk

Reporter: Behaiddin Eray Gedioğlu

Attendance List: Emre Can Öztürk, Behaiddin Eray Gedioğlu, Salim Elçi, Orkun Altınyelken, Baran Çakmak Demir, Ali Tunçer

- General information about the project was conveyed.

- The operation of the project and what was expected from us were discussed.

- We shared our knowledge regarding the tasks that two different departments are required to complete with each other.

2. MEETING MINUTES AND DECISIONS

Team Leader: Behaiddin Eray Gedioğlu

Reporter: Salim Elçi

Attendance List: Emre Can Öztürk, Behaiddin Eray Gedioğlu, Salim Elçi, Orkun Altınyelken, Baran Çakmak Demir, Ali Tunçer

- Potential project topics were discussed.

- Ideas were exchanged about what type of project would be suitable for us.

- It was decided to undertake the "Encrypted Door Lock" project, and the tasks we need to complete in the future were discussed.

3. MEETING MINUTES AND DECISIONS

Team Leader: Salim Elçi

Reporter: Emre Can Öztürk

Attendance List: Emre Can Öztürk, Behaiddin Eray Gedioğlu, Salim Elçi, Orkun Altınyelken, Baran Çakmak Demir, Ali Tunçer

-The material list required for the project was discussed.

-How to set up the circuit in the simulation part was debated.

4. MEETING MINUTES AND DECISIONS

Team Leader: Baran Çakmak Demir

Reporter: Orkun Altınyelken

Attendance List: Emre Can Öztürk, Behaiddin Eray Gedioğlu, Salim Elçi, Orkun Altınyelken, Baran Çakmak Demir, Ali Tunçer

-The setup of the circuit in the simulation part has been completed.

-A software development plan has been established.

5. MEETING MINUTES AND DECISIONS

Team Leader: Ali Tunçer

Reporter: Baran Çakmak Demir

Attendance List: Emre Can Öztürk, Behaiddin Eray Gedioğlu, Salim Elçi, Orkun Altınyelken, Baran Çakmak Demir, Ali Tunçer

-The software development part has been completed.

- The project was tested in the simulation and worked successfully.

6. MEETING MINUTES AND DECISIONS

Team Leader: Orkun Altınyelken

Reporter: Ali Tunçer

Attendance List: Emre Can Öztürk, Behaiddin Eray Gedioğlu, Salim Elçi, Orkun Altınyelken, Baran Çakmak Demir, Ali Tunçer

-The PCB board has been printed.

- The circuit was created in real life.