

Steps for execution of project code on “Mutual Authentication of IoT devices using ECC

Here, in this document, we have presented the necessary steps required to execute the attached project code. There are some prerequisite softwares to be downloaded as well as some libraries that needs to be included.

Since the project uses Java and socket programming, make sure your system meets the requirements.

Step 1:

Download and install latest version of IntelliJ from jetbrains:

Download link for Windows:

<https://www.jetbrains.com/idea/download/#section=windows>

Download link for MAC:

<https://www.jetbrains.com/idea/download/#section=windows>

Download link for Linux: <https://www.jetbrains.com/idea/download/#section=linux>

Step 2:

Download and install MySQL for your system. Make sure to install all packages in MySQL.

Download link for MySQL: <https://www.mysql.com/downloads/>

Step 3:

Open MySQL console and type below commands:

```
CREATE DATABASE project;  
USE project;  
CREATE TABLE users (  
ID INT PRIMARY KEY AUTO_INCREMENT,  
Name VARCHAR(20) NOT NULL,  
Mobile VARCHAR(15) NOT NULL,  
Gender VARCHAR(10),  
DOB VARCHAR(10) NOT NULL,  
Addr VARCHAR(255),  
qr_codes VARCHAR(255) NOT NULL,  
password VARCHAR(200) NOT NULL);  
MACID VARCHAR(250) NOT NULL;
```

Step 4:

Download java JDBC connector **mysql-connector-java-5.1.48** from the given link

Download link: <https://dev.mysql.com/downloads/connector/j/5.1.html>

Step 5:

Download java activation jar file **activation.jar** from the given link

Download link: <http://www.java2s.com/Code/Jar/a/Downloadactivationjar.htm>

Step 6:

Download java mail jar file **javax.mail.jar** from the given link

Download link: <http://www.java2s.com/Code/Jar/j/Downloadjavaxmailjar.htm>

Step 7:

Download and get the java **bouncy castle jar** files from the link

Download link: https://www.bouncycastle.org/latest_releases.html

Step 8:

Open IntelliJ and create a project. Create a java file inside the project and alter the name of class from the code to your .java filename.

Step 9:

Add **mysql-connector-java-5.1.48**, **activation.jar**, **javax.mail.jar** as well as **bouncy castle jar** files into the library of IntelliJ where the project is created.

Step 10:

Paste the code given in the attached GitHub link inside the .java file that is created.

Step 11:

Make the necessary path changes and MySQL username and password changes in the code.

Step 12:

Run the program (Shift + 10 or Run) and wait for the GUI to be displayed. Make a new user registration with the necessary details and proceed with given instructions in GUI

Now, you are able to exchange data securely from one device to another via lightweight Elliptic Curve Cryptography (ECC) technique. The data that is being exchanged is securely encrypted at sender's side and decrypted at receiver's side using the keys generated by ECC.

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