Git Repository Address: https://github.com/zc87-Leo/Fetch-Rewards-Coding-Exercise---Backend-Software-Engineering.git
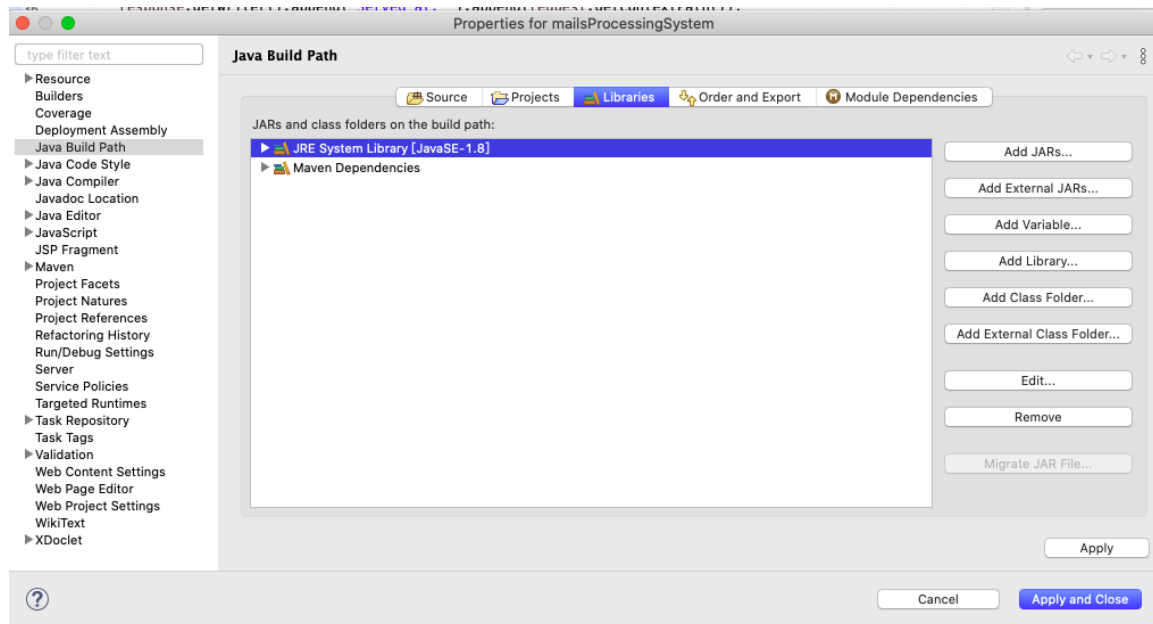
Mail Processing System is a Maven project, and it run on Tomcat.

How to run this project?

Step 1:

When you download successfully and import it into your IDE (I used Eclipse here), you also need to configure a tomcat server.

Step 2:   You need to ensure that your excution environment is JAVASE-1.8. **It is very important!**

Step 3:

Add this project on your Tomcat Server.
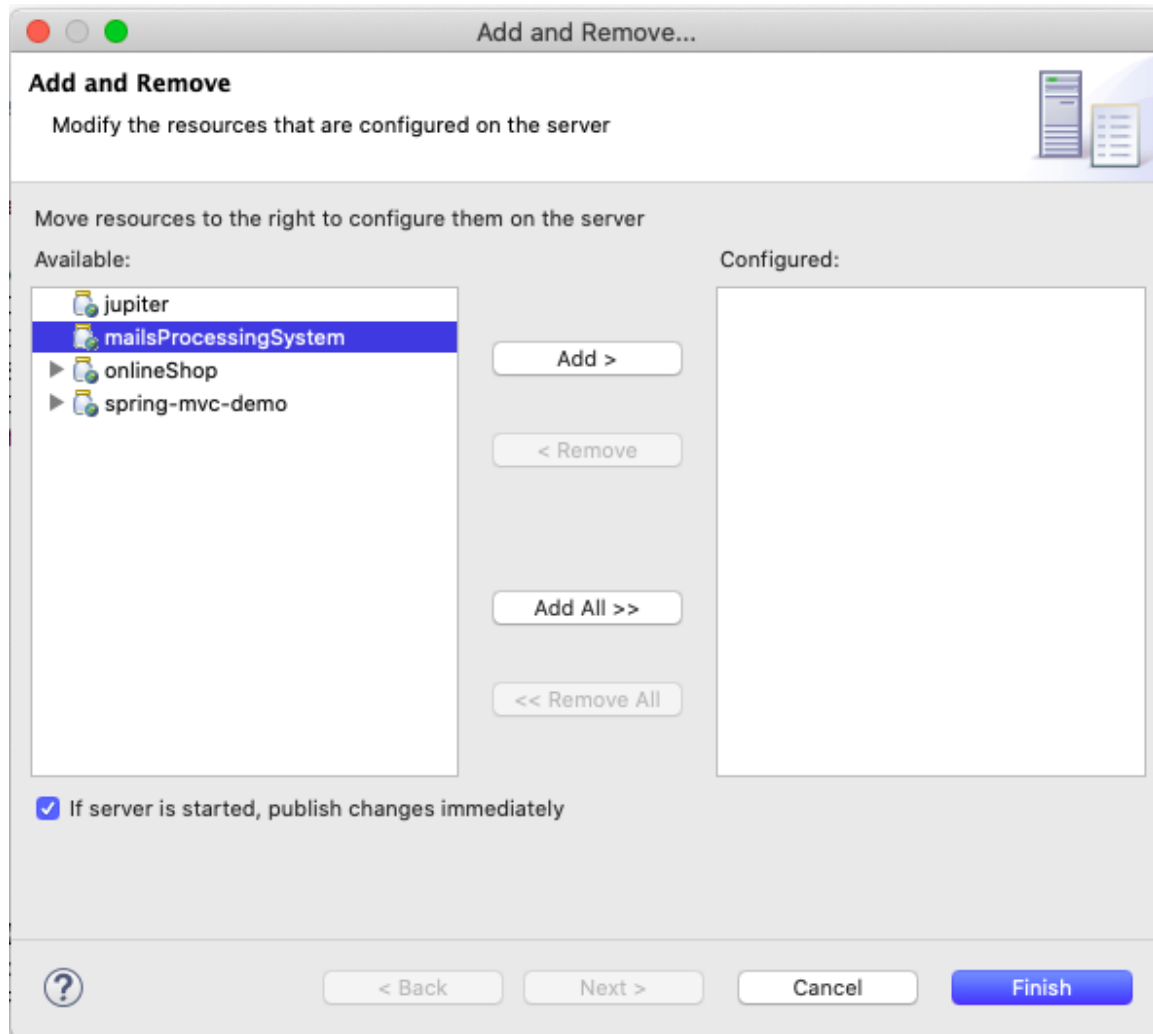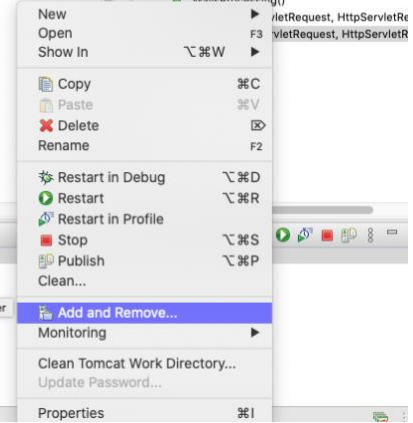
```java
48        Set<String> set = new HashSet<>(); //in order to remove duplicate
49        JSONObject obj = new JSONObject();
50        for (Object j : mailsList) {
51            String s = j.toString();
52            s = s.substring(0, s.length() - 10); // must be gmail (remove "@gmail.com")
53            char[] array = s.toCharArray();
54            StringBuilder sb = new StringBuilder();
55            for (char c : array) { //Logic: 1. Ignore'.';   2.Ignore the part after "+";
56                if (c == '.') {
57                    continue;
58                } else if (c == '+') {
59                    break;
60                } else {
61                    sb.append(c);
62                }
63            }
64            set.add(sb.toString());
65        }
66        obj.put("number_of_unique_emails", set.size());
67        RpcHelper.writeJsonObject(response, obj);
58    }
59 }
70
```

Problems @ Javadoc Declaration Console Servers ⊠

Apache Tomcat v9.0 at localhost [Started, Synchronized]

Add and Remove resources to the server

Outline ⊠

rpc
MailsProcessing
  serialVersionUID : long
  MailsProcessing()

New   ▶
Open   F3
Show In   ⌥⌘W   ▶

Copy   ⌘C
Paste   ⌘V
Delete   ⌦
Rename   F2

Restart in Debug   ⌥⌘D
Restart   ⌥⌘R
Restart in Profile
Stop   ⌥⌘S
Publish   ⌥⌘P
Clean...

Add and Remove...
Monitoring   ▶

Clean Tomcat Work Directory...
Update Password...

Properties   ⌘I

Add and Remove...

Add and Remove

Modify the resources that are configured on the server

Move resources to the right to configure them on the server

Available:

- jupiter
- mailsProcessingSystem
- ▶ onlineShop
- ▶ spring-mvc-demo

Add >

< Remove

Add All >>

<< Remove All

Configured:

☑ If server is started, publish changes immediately

< Back   Next >   Cancel   Finish

Step 4:

Execute maven install, and after the build success is displayed in the console, restart the tomcat server.

```
                                              40   * @see HttpServlet#doPost(HttpServletRe
 ▶ hibernate-tutorial                         41   *    response)
 ▶ jupiter                                     42   */
 ▼ mailsProcessingSystem                     ▲43⊖ protected void doPost(HttpServletRequest
   ▼ src/m    New                        ▶    44        throws ServletException, IOExcep
     ▼ rp     Go Into                         45     // TODO Auto-generated method stub
       ▶ J                                     46     JSONObject input = RpcHelper.readJSO
       ▶ J    Open in New Window               47     JSONArray mailsList = input.getJSONA
      src/t   Open Type Hierarchy        F4    48     Set<String> set = new HashSet<>(); /
   ▶ JRE      Show In               ⌥⌘W   ▶    49     JSONObject obj = new JSONObject();
   ▶ Mave                                      50     for (Object j : mailsList) {
   ▼ src      📄 Copy                     ⌘C    51         String s = j.toString();
     ▼ m      📄 Copy Qualified Name            52*        s = s.substring(0, s.length() -
       ▼      📋 Paste                    ⌘V   ▒ 53        char[] array = s.toCharArray();
                                                 54        StringBuilder sb = new StringBui
             ❌ Delete                    ⊠   55*        for (char c : array) { //Logic:
                                                 56            if (c == '.') {
        te   Remove from Context     ⌥⇧⌘↓   ▲ 57*                continue;
    ▶ targe  Build Path                   ▶   58            } else if (c == '+') {
      pom.   Source                 ⌥⌘S  ▶    59                break;
   ▶ onlineS Refactor               ⌥⌘T  ▶    50            } else {
   ▶ Servers                                   51                sb.append(c);
      spring- 📥 Import...                      52            }
   ▶ spring-  📤 Export...                      53        }
   ▶ spring-                                    54        set.add(sb.toString());
                                                55     }
             🔄 Refresh                   F5    56     obj.put("number_of_unique_emails", s
             Close Project                      57     RpcHelper.writeJsonObject(response,
             Close Unrelated Projects           58   }
             Assign Working Sets...             59 }

             🟢 Coverage As              ▶
             ▶ Run As                    ▶   📄 1 Run on Server           ⌥⇧X R
             🐞 Debug As                  ▶   🔲 2 Java Application        ⌥⌘X J        Console  Ser
             Profile As                  ▶   Ju 3 JUnit Test             ⌥⌘X T     arted, Synchronized]
             Restore from Local History...    m2 4 Maven build           ⌥⇧X M
             Java EE Tools               ▶   m2 5 Maven build...
             Maven                       ▶   m2 6 Maven clean
             Team                        ▶   m2 7 Maven generate-sources
             Compare With                ▶   m2 8 Maven install
             Configure                   ▶   m2 9 Maven test
             ☑ Validate
                                             Run Configurations...
             Properties               ⌘I
mailsProcessing
```
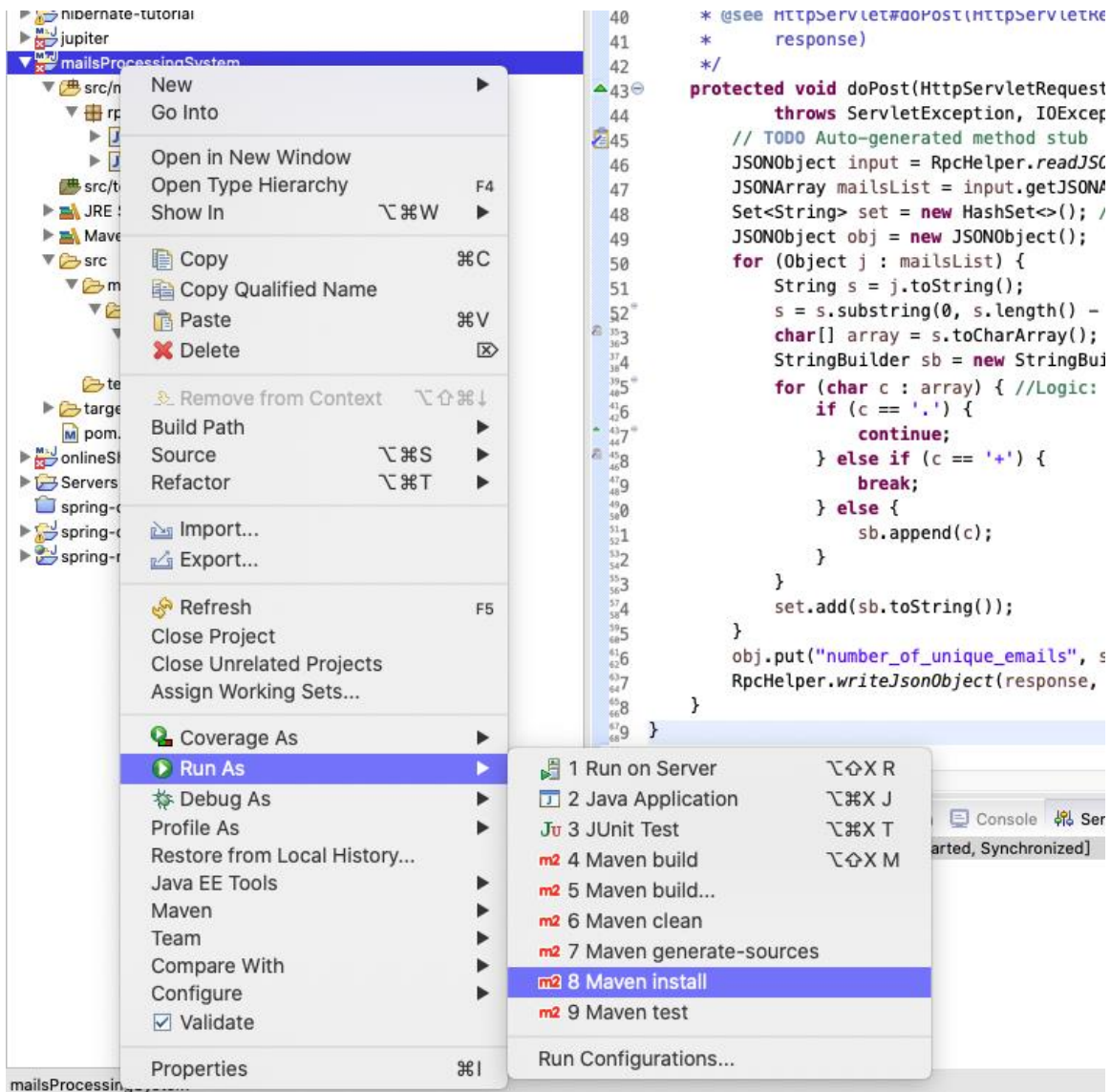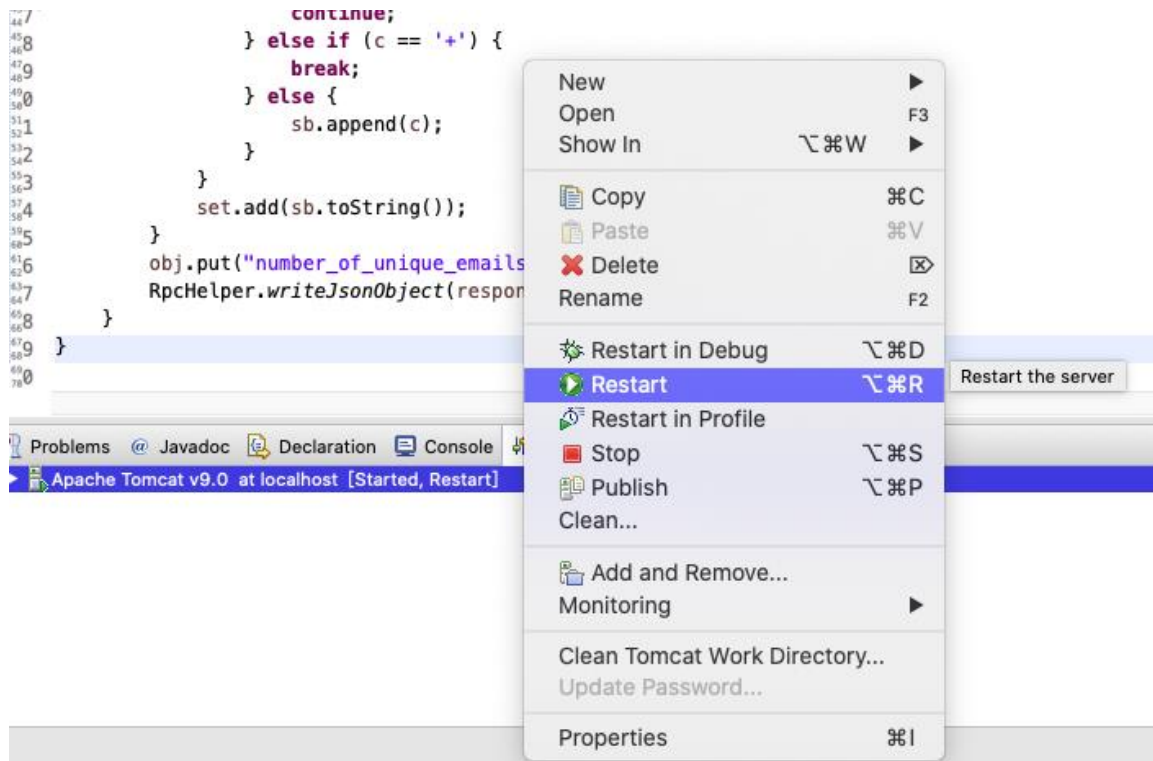
Problems @ Javadoc 🔍 Declaration 💻 Console ⊠ 🔧 Servers

```
<terminated> /Library/Java/JavaVirtualMachines/jdk1.8.0_231.jdk/Contents/Home/bin/java (2020年9月28日 下午3:25:52)
[INFO] Installing /Users/zhangcheng/eclipse-workspace/mailsProcessingSystem/target/mailsProces
[INFO] Installing /Users/zhangcheng/eclipse-workspace/mailsProcessingSystem/pom.xml to /Users/:
[INFO] ------------------------------------------------------------------------
[INFO] BUILD SUCCESS
[INFO] ------------------------------------------------------------------------
[INFO] Total time:  1.746 s
[INFO] Finished at: 2020-09-28T15:25:55-04:00
[INFO] ------------------------------------------------------------------------
```

```
           continue;
        } else if (c == '+') {
            break;
        } else {
            sb.append(c);
        }
    }
    set.add(sb.toString());
}
obj.put("number_of_unique_emails
RpcHelper.writeJsonObject(respon
    }
}
```

New		▶
Open		F3
Show In	⌥⌘W	▶
📋 Copy		⌘C
📋 Paste		⌘V
✖ Delete		⌫
Rename		F2
🐞 Restart in Debug	⌥⌘D	
▶ Restart	⌥⌘R	
📊 Restart in Profile		
■ Stop	⌥⌘S	
📇 Publish	⌥⌘P	
Clean...		
📁 Add and Remove...		
Monitoring		▶
Clean Tomcat Work Directory...		
Update Password...		
Properties		⌘I

Problems   @ Javadoc   🔍 Declaration   💻 Console
▶ 🐱 Apache Tomcat v9.0 at localhost [Started, Restart]

Restart the server

Step 5:

Open your **Postman**:

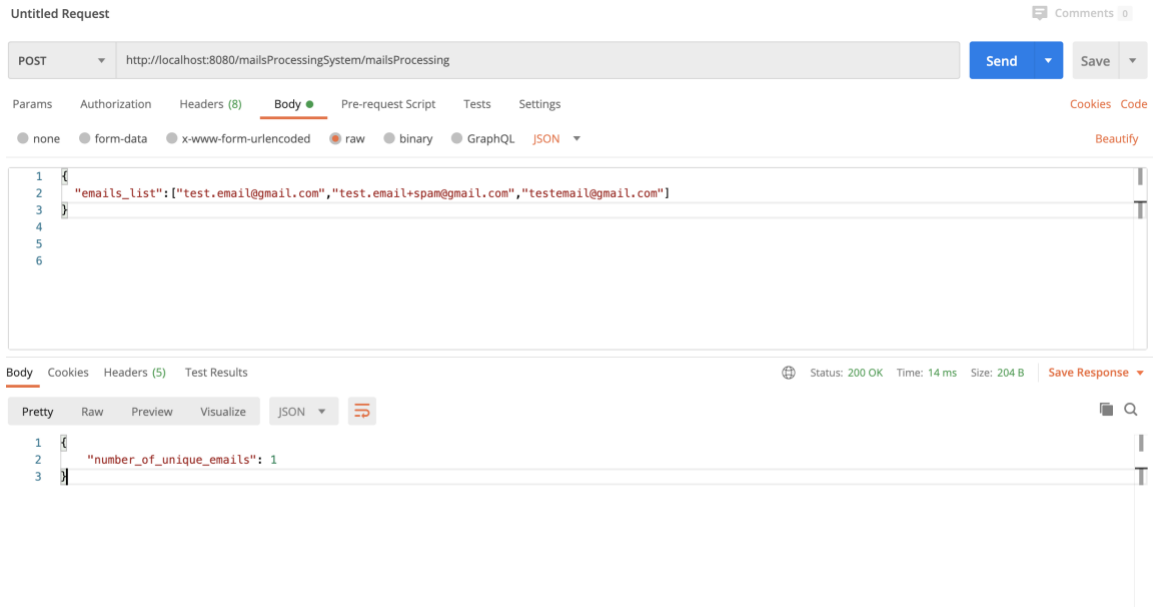Use **POST** method: http://localhost:8080/mailsProcessingSystem/mailsProcessing

Test:

Request Body 1:

```
{
  "emails_list":["test.email@gmail.com","test.email@fetchrewards.com"]
}
```

Response Body 1:

```
{
    "number_of_unique_emails": 2
}
```

POST ▼ | http://localhost:8080/mailsProcessingSystem/mailsProcessing | **Send** ▼ | Save ▼

Params | Authorization | Headers (8) | Body ● | Pre-request Script | Tests | Settings | Cookies Code

● none ● form-data ● x-www-form-urlencoded ● raw ● binary ● GraphQL JSON ▼ | Beautify

```
1  {
2      "emails_list":["test.email@gmail.com","test.email+spam@gmail.com","testemail@gmail.com"]
3  }
4
5
6
```

Body | Cookies | Headers (5) | Test Results | ⊕ Status: 200 OK Time: 14 ms Size: 204 B | Save Response ▼

Pretty | Raw | Preview | Visualize | JSON ▼ | ⇥

```
1  {
2      "number_of_unique_emails": 1
3  }
```

Request Body 2:

```
{

"emails_list":["test.email@gmail.com","test.email+spam@gmail.com","testemail@gm

ail.com"]

}
```

Response Body 2:

```
{

    "number_of_unique_emails": 1

}
```

Untitled Request   Comments 0

POST ▾   http://localhost:8080/mailsProcessingSystem/mailsProcessing   Send ▾   Save ▾

Params   Authorization   Headers (8)   Body ●   Pre-request Script   Tests   Settings   Cookies   Code

● none   ● form-data   ● x-www-form-urlencoded   ● raw   ● binary   ● GraphQL   JSON ▾   Beautify

```
1  {
2      "emails_list":["test.email@gmail.com","test.email+spam@gmail.com","testemail@gmail.com"]
3  }
4
5
6
```

Body   Cookies   Headers (5)   Test Results   ⊕   Status: 200 OK   Time: 14 ms   Size: 204 B   Save Response ▾

Pretty   Raw   Preview   Visualize   JSON ▾   ⇥   ☐ Q

```
1  {
2      "number_of_unique_emails": 1
3  }
```

🎓 Bootcamp   Build   Browse

Thanks for reading, have a nice day 😊 !