**DOCUMENTATION**

Github link: <https://github.com/vstephne/Employee>

POSTMan API link: https://www.getpostman.com/collections/8008e8b6b112a47a2556

ASSUMPTION:

1. Assuming username for every user is unique for a user
2. Assuming minimum annualSalary is 12000$ and set it as default in case not entered
3. A user can have different address but their names must be unique for a given user
4. Assuming userStatus is userType and it starts from 1
5. Password length must be between 10 to 15 charecters

SYSTEM DESIGN:

1. DATABASE
   1. The database name is USER\_DETAILS
   2. The Database has two tables
      1. USER\_PROFILE\_INFO which contains all the information about Users
      2. The data also includes username and password this could be put into a separate table as they are for a specific purpose login and logout but as they are singular for a given user at a given time I have added to same USER\_PROFILE\_INFO table
      3. The next table is USER\_ADDRESS it has addresses of users as a user can have multiple addresses but their names must be unique.
      4. The combination of both username and addrname is made a primary key.
2. SPRING BOOT APPLICATION:
   1. I have divided the code into multiple sections
      1. Entity: This package mainly has information about the table the columns their type and their getter-setter methods.
      2. Dao: This is the data layer. It has functions that fetch data or perform any SQL related function.
      3. Service: It is one layer above dao layer here we call the functions in Dao layer and if there are any extra functionalities we add it here
      4. Controller: It is the entry point for any API the mappings of different API to their respective functions are done at this layer.
   2. These are some of the API’s and their outputs:
      1. localhost:8080/userGraphical user interface, text, application, email

         Description automatically generated
      2. localhost:8080/user/address

Graphical user interface

Description automatically generated

* + 1. localhost:8080/user/createWithArray

Graphical user interface, text

Description automatically generated

* + 1. localhost:8080/user/createWithList

Graphical user interface, text, application, email

Description automatically generated

* + 1. localhost:8080/user/{username}

Text

Description automatically generated

* + 1. localhost:8080/user/{username}

Graphical user interface, text

Description automatically generated

This is POSTMAN Collection with all the API: <https://www.getpostman.com/collections/8008e8b6b112a47a2556>

STEPS to run the application:

1. Install MYSQL in the system
2. Open the .sql file attached in email or found on repository under SQL folder
3. Clone the repository
4. Go to application.properties file under src/main/resources and add ur path to DB, username and password for Database.
5. Run it as a springboot application
6. Run various API dfound on post man which can be accessed by above link

SYSTEM DESIGN QUESTION:

1. If we want to add extra information to address table like walkScore, TransitScore,crimerate for neighborhood we can make these into a separate table. Requirement being if we have two address in same location factors like crime rate and TransitScore will repeatwhich is bad. In order to normalize we can put them into a different table with the foreign key of the table referencing address table primary key.
2. GPS coordinates for a given address is always same so we can add it to address table directly.
3. From the side of API to get GPS coordinates it is a direct SELECT query based on username and address name on the address table.
4. For TransitScorewalkScore and crimerate we must do SELECT query based on username and address name on the new extra table which would be created.

Things which could not be completed:

Error handling has not be done due to lack of time.