Deliverable #2:
CSI2132[B]: Databases I
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School of Electrical Engineering and Computer Science
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a)
For the implementation of the e-Hotels application, the following technologies were used:

- **Database Management System (DBMS):**
  - PostgreSQL was used as the relational database system for managing all hotel-related data. JDBC (Java Database Connectivity) was employed to connect the Java backend to the PostgreSQL database.
- **Programming Languages:**
  - Java: Used for the backend logic of the application, including database interaction (via interfaces such as CustomerInterface, BookingInterface, DBModifier, etc.).
  - JSP (JavaServer Pages): Used for creating dynamic web pages that interact with the backend.
  - HTML/CSS/Bootstrap: Used for the frontend structure and styling.
  - SQL (PostgreSQL DDL & DML): Used for defining the database schema and managing data.

b)

1. Prerequisites - Tools Needed to be already installed
   a. Java Development Kit (JDK)
      i. https://www.oracle.com/java/technologies/javase-downloads.html
   b. Apache Tomcat Server
      i. https://tomcat.apache.org/download-10.cgi
   c. PostgreSQL with pgAdmin
      i. https://www.postgresql.org/download/
   d. IntelliJ IDEA
      i. https://www.jetbrains.com/idea/download

   We used the prerequisites mentioned above to make our database project. The TAs should already have them installed as we followed the labs (notably labs #1, 6 & 7) which go over their installations and set-up.

2. Clone the Project from GitHub
   a. GitHub repo link for the project: https://github.com/sspen094/CSI2132Group190
   b. Command in Git Bash: git clone https://github.com/sspen094/CSI2132Group190

3. Set up the PostgreSQL Database
   a. Go to section c) where a list of DDLs that creates the database

4. Project Configuration
   a. Before running the project:
      i. Go to Project/src/main/java/com/hotelapp/DBModifier.java

ii. Make sure that these fields correspond to what you have set up during your PostgreSQL installation/set-up

```
private static final String url = "jdbc:postgresql://localhost:5432/hotel_management";  7 usages
private static final String username = "postgres";  7 usages
private static final String password = "P@ssW0rd!2024";  7 usages
```

5. Deploy the Application to Tomcat in Intellij
    a. Considering that the Tomcat server has been setup in Intellij following Lab 6:
        i. Run the Tomcat Server in Intellij by clicking the play button
        ii. Access the web app which runs here: http://localhost:8080/eHotels

* Note that the web app should open the link mentioned in the previous line automatically

c)

1. Create a new database
    a. Name it “hotel_management”
2. Right-click this database from the tree control
    a. Click “Query Tool” as one of the options
3. Copy-paste setup.sql
4. Execute the script
5. Repeat steps 2-4 for view.sql

Now, these sql files are at the root directory of the project and these are the DDLs needed to create the database and run the web app as expected in the project requirements. However, I would like to also add this which isn’t part of this question since they are not needed but is still relevant:

- Insertion.sql (DML) can be used to insert data for hotel chains, hotels, rooms, customers, employees, bookings and rentings from the query tool in pgAdmin. This is 2.b) from the project pdf file.
- Now, Query.sql (DDL) is 2.c) from the project pdf file.
- Part 2.d) from the project pdf file is already in Setup.sql as the triggers.
- Also, Index.sql (DDL) is 2.e) from the project pdf file.
- Finally, Teardown.sql can be used to delete everything in the database if needed.