BASIC HRMS FLASK APP REPORT

NOTE: I have uploaded a video demo of the project to avoid local setup at the following link: https://www.youtube.com/watch?v=TvUbUtULWvU

Github link: https://github.com/kingsneverdie1411/HRMS-Flask-App

LOCAL SETUP INSTRUCTIONS:

1) Clone the repository using:
   git clone https://github.com/kingsneverdie1411/HRMS-Flask-App.git

2) Navigate to project directory: cd HRMS-Flask-App

3) Go through requirements.txt to make sure everything is installed on your local system. The commands are:
   - pip install Flask-SQLAlchemy
   - pip install pymysql
   - pip install flask

4) Now we need to set up the MySQL database. Please select a user and create a database “hrms” with 2 tables “employees” and “attendance”.
   The commands for the same are in the “SQL_Tables.txt” file.

5) Before moving ahead, please make necessary changes in the “app.py” file to change the user and password for the MySQL database.

```
app = Flask(__name__)
# Using SQL Alchemy for database access
app.config['SQLALCHEMY_DATABASE_URI'] =
'mysql+pymysql://neil:neilhanda@localhost/hrms'
# Change to mysql+pymysql://username:password@localhost/hrms  # Here hrms is the
database name
db = SQLAlchemy(app)
```

6) Now we can run using “python3 app.py” and access the web-app at http://127.0.0.1:5000/

HOW TO USE API AND EXAMPLES:

The use of API and examples have been covered in the Video mentioned above.

DATABASE SCHEMA:

For the database schema, I have created two tables - Employees and Attendance where The employee_id in the Attendance table is a foreign key referencing the id in the Employees table.

The employees table keeps track of all the employees along with departments, designation and date of joining. The attendance table keeps track of the attendance for every employee for a given date- 0/1 implying present/absent.

DESIGN DECISIONS:

I decided to create a separate table for attendance to avoid multiple rows for the same employee in the Employee table and create clear distinction for the purpose of each table.

1. Primary Key Selection:
The id field in the Employees table serves as the primary key, ensuring each employee has a unique identifier.
The Attendance table utilizes a composite primary key (employee_id and date) to ensure uniqueness for each attendance entry and avoiding multiple entries for same date for a particular employee

2. Foreign Key Relationship:
The employee_id in the Attendance table establishes a foreign key relationship with the id in the Employees table. This relationship ensures that each attendance entry is associated with a valid employee.