

Report on Creating the Database System

Database Type: We used MySQL Workbench 8.0 for this.

1. Database Setup

What We Created:

Sql queries:-

```
CREATE DATABASE attendance_system;  
CREATE TABLE employee (id INT, name VARCHAR(255), designation  
VARCHAR(255));  
CREATE TABLE attendance (id INT AUTO_INCREMENT, employee_id INT, date  
DATE, time_in TIME);
```

- Employee Table: Stores employee details (ID, Name, Job)
- Attendance Table: Automatically records check-in times

Tables Created:

Employees Table:

```
CREATE TABLE employee (  
  id INT PRIMARY KEY,  
  name VARCHAR(255),  
  designation VARCHAR(255);
```

- It stores employee IDs, names, and job roles
- Example: (4, 'Swastik', 'Data Science Student')

Attendance Table:

```
CREATE TABLE attendance (  
  id INT AUTO_INCREMENT PRIMARY KEY,  
  employee_id INT,  
  date DATE,  
  time_in TIME);
```

- Automatically records date/time when employees are recognized.
- Links to employees using their ID.

Insertion:-

```
INSERT INTO employee VALUES  
(0,'Arslan','Data Researcher'),  
(1,'Praful','Senior Data Analyst'),  
(2,'Sanket','Data Analyst'),  
(3,'Rizwan','Data Analyst'),  
(4,'Swastik','Data Science Student');
```

Part 2: Connecting Python to Database

Database Configuration:

In python code:-

Pip install

```
DB_CONFIG = {  
    'host': '128.0.01',  
    'user': 'root',  
    'password': 'root',  
    'database': 'attendance_system',  
    'port': 3306  
}
```

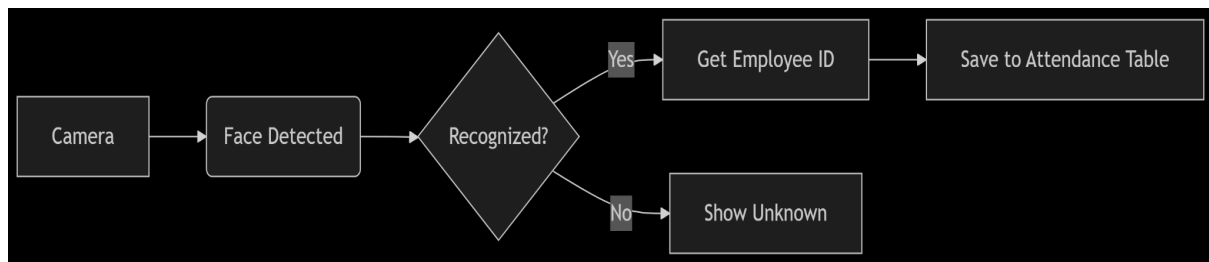
Its like setting up an address to connect to the database,

Mark Attendance:-

```
def mark_attendance(employee_id):  
    # Checks if already marked today  
    INSERT INTO attendance VALUES (employee_id, current_date, current_time)  
View Attendance:
```

```
SELECT e.name, a.date, a.time_in  
FROM attendance a  
JOIN employee e ON a.employee_id = e.id
```

Part 3: How It Works Together



Key Features:

Smart Checks:

- Cooldown Period: Won't mark same person within 5 seconds
- Duplicate Prevention: Only 1 entry per day per employee
- Recognition Threshold: 70% confidence required (RECOGNITION_THRESHOLD = 0.7)

Technical Components:-

<i>Component</i>	<i>Purpose</i>	<i>Technology Used</i>
<i>Face Detection</i>	<i>Finds faces in video</i>	YOLOv8 (AI model)
<i>Face Recognition</i>	<i>Identifies employees</i>	Facenet (AI embeddings)
<i>Database</i>	<i>Stores records</i>	MySQL
<i>Attendance Logic</i>	<i>Manages check-ins</i>	Python/SQL

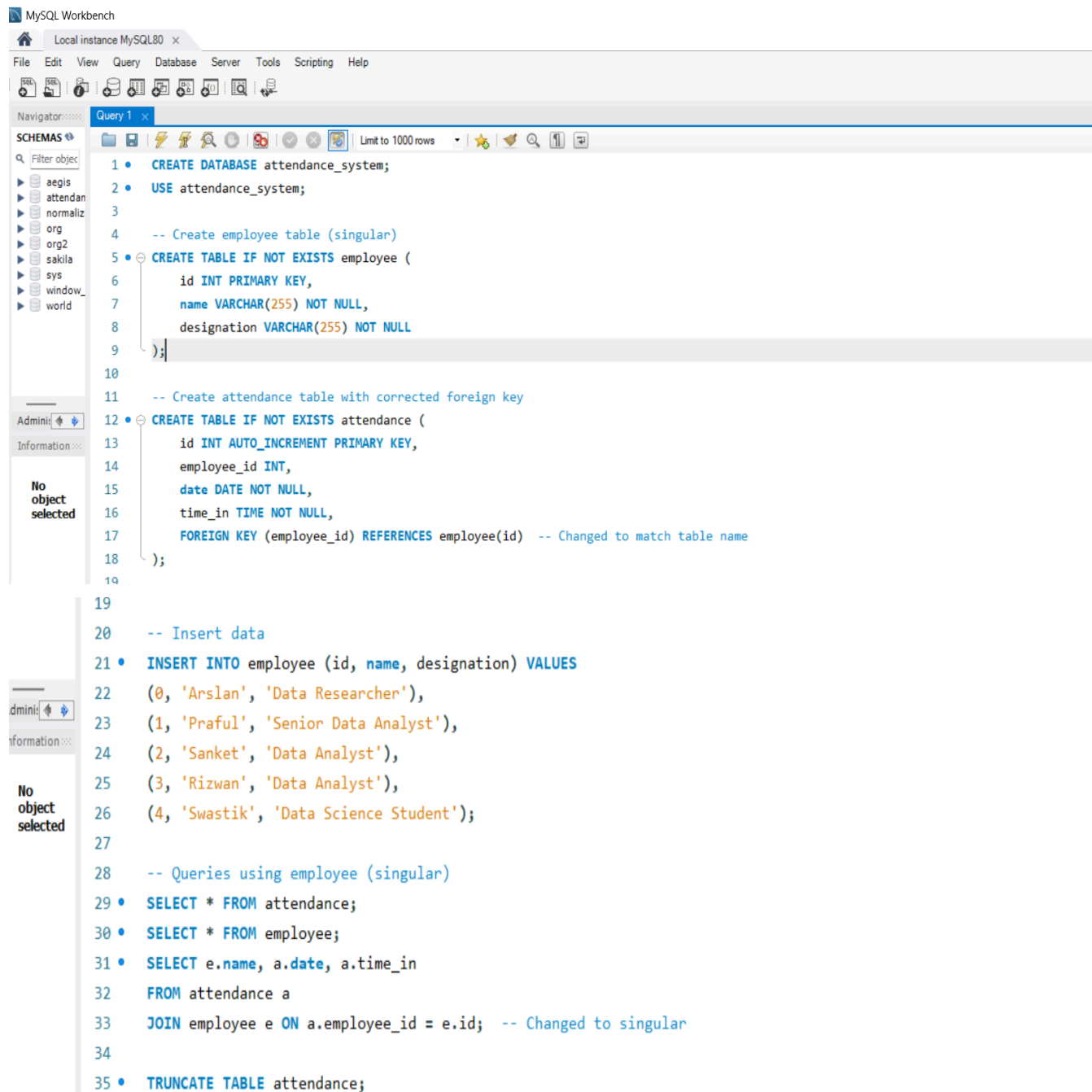
Attendance Report:

Shows entries like:

Praful 2023-05-20 09:15:00

Swastik 2023-05-20 09:16:30

Queries used :-



The screenshot shows the MySQL Workbench interface with a query editor. The left sidebar displays the 'SCHEMAS' tree with a filter 'Filter object'. The 'Navigator' tab is active, showing a list of schemas: aegis, attendan, normaliz, org, org2, sakila, sys, window, and world. The 'Query 1' tab is selected, showing the following SQL queries:

```
1 • CREATE DATABASE attendance_system;
2 • USE attendance_system;
3
4 -- Create employee table (singular)
5 • CREATE TABLE IF NOT EXISTS employee (
6     id INT PRIMARY KEY,
7     name VARCHAR(255) NOT NULL,
8     designation VARCHAR(255) NOT NULL
9 );
10
11 -- Create attendance table with corrected foreign key
12 • CREATE TABLE IF NOT EXISTS attendance (
13     id INT AUTO_INCREMENT PRIMARY KEY,
14     employee_id INT,
15     date DATE NOT NULL,
16     time_in TIME NOT NULL,
17     FOREIGN KEY (employee_id) REFERENCES employee(id) -- Changed to match table name
18 );
19
20 -- Insert data
21 • INSERT INTO employee (id, name, designation) VALUES
22     (0, 'Arslan', 'Data Researcher'),
23     (1, 'Praful', 'Senior Data Analyst'),
24     (2, 'Sanket', 'Data Analyst'),
25     (3, 'Rizwan', 'Data Analyst'),
26     (4, 'Swastik', 'Data Science Student');
27
28 -- Queries using employee (singular)
29 • SELECT * FROM attendance;
30 • SELECT * FROM employee;
31 • SELECT e.name, a.date, a.time_in
32 FROM attendance a
33 JOIN employee e ON a.employee_id = e.id; -- Changed to singular
34
35 • TRUNCATE TABLE attendance;
```

The interface also shows the 'Admin' and 'Information' tabs on the left, both indicating 'No object selected'.