Assignment CSC8017

Coursework 1

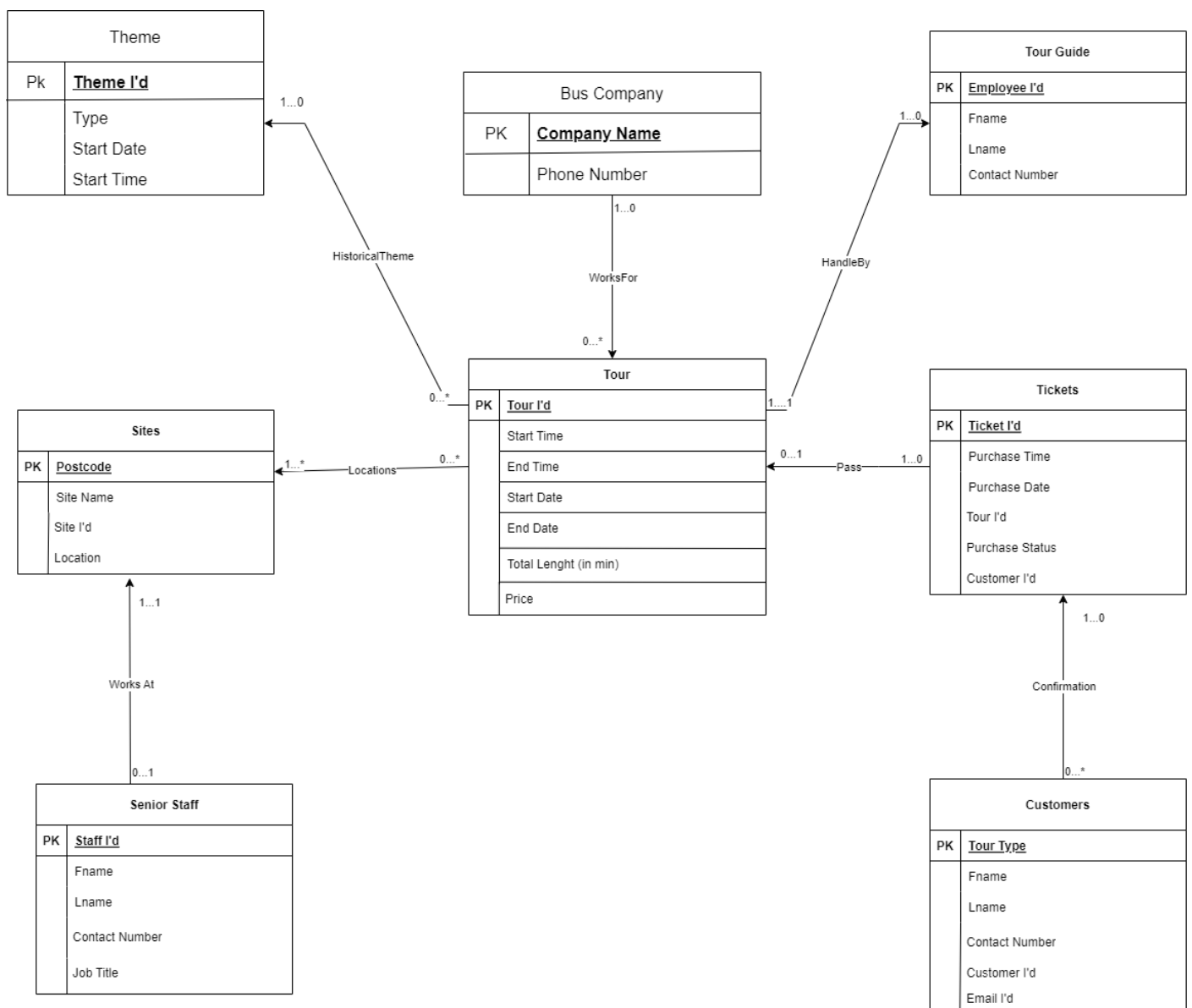| Name	Student Number	Course Name
Shubham Jain	**230583384**	**MSc Computer Science**

Question 1

Draw an entity-relationship diagram for the above scenario. You must explain any assumptions that you make during the design process and use the same design of diagram (UML) as the lecture notes.

Solution

Assumptions –

- **Assuming all sites and themes plays individual role.**
- **Assuming just one ticket price for simplicity.**
- **Assuming no two tours will start on the same date and at the same time as there isn't the room at the bus station.**
- **Assuming there will always be enough capacity on a tour.**
- **Assuming each staff member works at only one venue.**

Question 2

Implement your design in MySQL. Populate your database tables with data of your choice (this does not need to be a huge amount of data, maybe 5-10 rows for each base table). If you make any changes to your original design from Task 1, these must be explained.

Solution

```sql
CREATE TABLE Tour (
    tour_id INT PRIMARY KEY,
    start_date DATE,
    end_date DATE,
    start_time INT,
    end_time INT,
    total_length INT,
    FOREIGN KEY (theme_id) REFERENCES Theme(theme_id),
    FOREIGN KEY (guide_id) REFERENCES TourGuide(guide_id)
);

CREATE TABLE TourGuide (
    employee_id INT PRIMARY KEY,
    fname VARCHAR(100) NOT NULL,
    lname VARCHAR(100) NOT NULL,
    contact_number INT,
);

CREATE TABLE Theme (
    theme_id INT PRIMARY KEY,
    theme_type VARCHAR(100) NOT NULL,
    start_date DATE,
    end_date DATE,
);

CREATE TABLE BusCompany (
    company_name VARCHAR(100) NOT NULL PRIMARY KEY,
    phone_number INT
);

CREATE TABLE Sites (
    site_postcode INT PRIMARY KEY,
    site_name VARCHAR(100) NOT NULL,
    site_id INT,
    location VARCHAR(100) NOT NULL,
);

CREATE TABLE SeniorStaff (
    staff_id INT PRIMARY KEY,
    fname VARCHAR(100) NOT NULL,
    lname VARCHAR(100) NOT NULL,
    contact_number INT,
```

```sql
    job_title VARCHAR(100) NOT NULL
);

CREATE TABLE Tickets (
    ticket_id INT PRIMARY KEY,
    purchase_time INT,
    purchase_date DATE,
    tour_id INT,
    Purchase_status VARCHAR(100) NOT NULL,
    customer_id INT,
);

CREATE TABLE Customers (
    tour_type INT PRIMARY KEY,
    fname VARCHAR(50) NOT NULL,
    lname VARCHAR(50) NOT NULL,
    customer_id INT PRIMARY KEY,
    email VARCHAR(100) UNIQUE NOT NULL
);
```