A picture containing calendar

Description automatically generated

**AMERICAN INTERNATIONAL UNIVERSITY–BANGLADESH (AIUB)**

**DEPARTMENT OF ENGINEERING**

[**INTRODUCTION TO DATABASE**](https://portal.aiub.edu/Student/Section?q=j3Wc6QZpwj8GAUZ6rruD2A%3D%3D)

**Section: K, Group: 5**

**Supervised By**

SIFAT RAHMAN AHONA

**Submitted By**

|  |  |
| --- | --- |
| **Name** | **ID** |
| 1. SADAF KHAN | 22-47021-1 |
| 2. MD. FAHIM BIN IMAM NAHID | 22-46078-1 |
| 3. BADHON BISWAS | 22-46351-1 |
| 4. MD. SAIDUZZAMAN SOHAG | 22-46006-1 |

**Date of Submission: December 04, 2022**

/\*===================================🡺

Inside (spot\_id, address, Space\_id, space\_type)

1NF: No multivalued attribute

2NF: Spot\_id, Address

Space\_id, Space\_Type,spot\_id

3NF: No transitive dependency

Spot\_id, Address

Space\_id, Space\_Type, Space\_id

Table: Spot\_id, Address

Space\_id, Space\_Type, Space\_id

/\*===================================🡺

Cost (Space\_id, Space\_type, Rate\_id, Hourly\_rate, Day\_Rate)

1NF: No multivalued attribute

2NF: Space\_id, Space\_Type

Rate\_id, Hourly\_rate, Day\_Rate,Type

SR\_ID, Space\_Id, Rate\_id

3NF: No transitive dependency

Space\_id, Space\_Type

Rate\_id, Hourly\_rate, Day\_Rate,Type

SR\_ID, Space\_Id, Rate\_id

Table: Space\_id, Space\_Type

Rate\_id, Hourly\_rate, Day\_Rate,Type

SR\_ID, Space\_Id, Rate\_id

/\*===================================🡺

Manages (Spot\_id, Address Manager\_id, phone\_number,

first\_name,last\_name, address,salary)

1NF: Phone\_number multivalued attribute

2NF: Spot\_id, Address, Manager\_id

Manager\_id, phone\_number, first\_name,last\_name, address,

salary

3NF: No transitive dependency

Spot\_id, Address, Manager\_id

Manager\_id, phone\_number, first\_name,last\_name, address,

salary

Table: Spot\_id, Address, Manager\_id

Manager\_id, phone\_number, first\_name,last\_name, address,

salary

/\*===================================🡺

Manage by(Manager\_id , phone\_number , first\_name,last\_name, salary,address, Employee\_id, first\_Name , last\_Name , hire\_date, Salary,phone\_number)

1NF: Phone\_number multivalued attribute

2NF: Manager\_id, phone\_number, first\_name,last\_name, address,

salary

Employee\_id, First\_Name, Last\_Name, hire\_date, Salary,

phone\_number, Manager\_id

3NF: No transitive dependency

Manager\_id , phone\_number , first\_name,last\_name, address,

salary

Employee\_id, First\_Name , Last\_Name , hire\_date, Salary,

Manager\_id

Table: Manager\_id , phone\_number , first\_name,last\_name, address,

salary

Employee\_id, First\_Name , Last\_Name , hire\_date, Salary,

phone\_number, Manager\_id

/\*===================================🡺

Assigned (Space\_id,Space\_Type,parking\_slip\_id,Issue\_date,Expair\_date,Type)

1NF: No multivalued attribute

2NF: Space\_id,Space\_Type

parking\_slip\_id,Issue\_date,Expair\_date,Type,space\_id

3NF: No transitive dependency

Space\_id,Space\_Type

parking\_slip\_id,Issue\_date,Expair\_date,Type,space\_id

Table: Space\_id,Space\_Type

parking\_slip\_id,Issue\_date,Expair\_date,Type,space\_id

/\*===================================🡺

Purchases (Customer\_id,First\_name,Last\_name,Email,Address,Phone\_number,

license\_plate\_number, Parking\_slip\_id,Issue\_date,

Expair\_date,Type)

1NF: Phone\_number multivalued attribute

2NF: Customer\_id,First\_name,Last\_name,Email,Address,Phone,

license\_plate\_number

Parking\_slip\_id,Issue\_date,Expair\_date,Type,Customer\_id

3NF: No transitive dependency

Customer\_id,First\_name,Last\_name,Email,Address,Phone,

license\_plate\_number

Parking\_slip\_id,Issue\_date,Expair\_date,Type,Customer\_id

Table: Customer\_id,First\_name,Last\_name,Email,Address,Phone,

license\_plate\_number

Parking\_slip\_id,Issue\_date,Expair\_date,Type,Customer\_id

/\*===================================🡺

Fine (Customer\_id,First\_name,Last\_name,Email,Address,Phone\_number,

license\_plate\_number, Fine\_id,Issue\_date,paid\_date,Amount)

1NF: Phone\_number multivalued attribute

2NF: Customer\_id,First\_name,Last\_name,Email,Address,Phone\_number,

license\_plate\_number,Fine\_id

Fine\_id,Issue\_date,paid\_date,Amount

3NF: No transitive dependency

Customer\_id,First\_name,Last\_name,Email,Address,Phone\_number,

license\_plate\_number,Fine\_id

Fine\_id,Issue\_date,paid\_date,Amount

Table: Customer\_id,First\_name,Last\_name,Email,Address,Phone\_number,

license\_plate\_number,Fine\_id

Fine\_id,Issue\_date,paid\_date,Amount

/\*===================================🡺

Issues (Manager\_id, phone\_number, Address, Fine\_id,Issue\_date,

paid\_date,Amount)

1NF: Phone\_number multivalued attribute

2NF: Manager\_id, phone\_number, Address

Fine\_id,Issue\_date, paid\_date,Amount,Manager\_id

3NF: No transitive dependency

Manager\_id, phone\_number, Address

Fine\_id,Issue\_date, paid\_date,Amount,Manager\_id

Table: Manager\_id, phone\_number, Address

Fine\_id,Issue\_date, paid\_date,Amount,Manager\_id

**Total Table:**

* 1.Spot\_id, Address
* 2.Space\_id, Space\_Type, Space\_id
* 3.Space\_id, Space\_Type
* 4.Rate\_id, Hourly\_rate, Day\_Rate, Type
* 5.SR\_ID, Space\_Id, Rate\_id
* 6.Spot\_id, Address, Manager\_id
* 7.Manager\_id, phone\_number, first\_name,last\_name, salary,

address

* 8.Manager\_id, phone\_number, first\_name,last\_name, salary

address

* 9.Employee\_id, first\_Name, Last\_Name, hire\_date, Salary,

Phone\_nubmer, Manager\_id

* 10.Space\_id, Space\_Type
* 11.parking\_slip\_id, Issue\_date, Expair\_date, Type,space\_id
* 12.Customer\_id, First\_name,Last\_name,Email,Address,Phone,

license\_plate\_number

* 13.Parking\_slip\_id, Issue\_date, Expair\_date, Type, Customer\_id
* 14.Customer\_id, First\_name, Last\_name, Email, Address,

Phone\_number, license\_plate\_number, Fine\_id

* 15.Fine\_id, Issue\_date, paid\_date, Amount
* 16.Manager\_id, phone\_number, Address
* 17.Fine\_id, Issue\_date, paid\_date, Amount,Manager\_id

**Final Table:**

1.Spot\_id, Address

2.Space\_id, Space\_Type, Space\_id

3.Rate\_id, Hourly\_rate, Day\_Rate,Type

4.SR\_ID, Space\_Id, Rate\_id

5.Spot\_id, Address, Manager\_id

6. Manager\_id, phone\_number, first\_name,last\_name, salary,address

7.Employee\_id, First\_Name, Last\_Name , hire\_date, Salary,

Phone\_number,manager\_id

8.parking\_slip\_id, Issue\_date,Expair\_date,Type,space\_id

9.Customer\_id, First\_name,Last\_name,Email,Address,Phone,

license\_plate\_number

10.Parking\_slip\_id, Issue\_date,Expair\_date,Type,Customer\_id

11.Customer\_id, First\_name,Last\_name,Email,Address,Phone\_number,

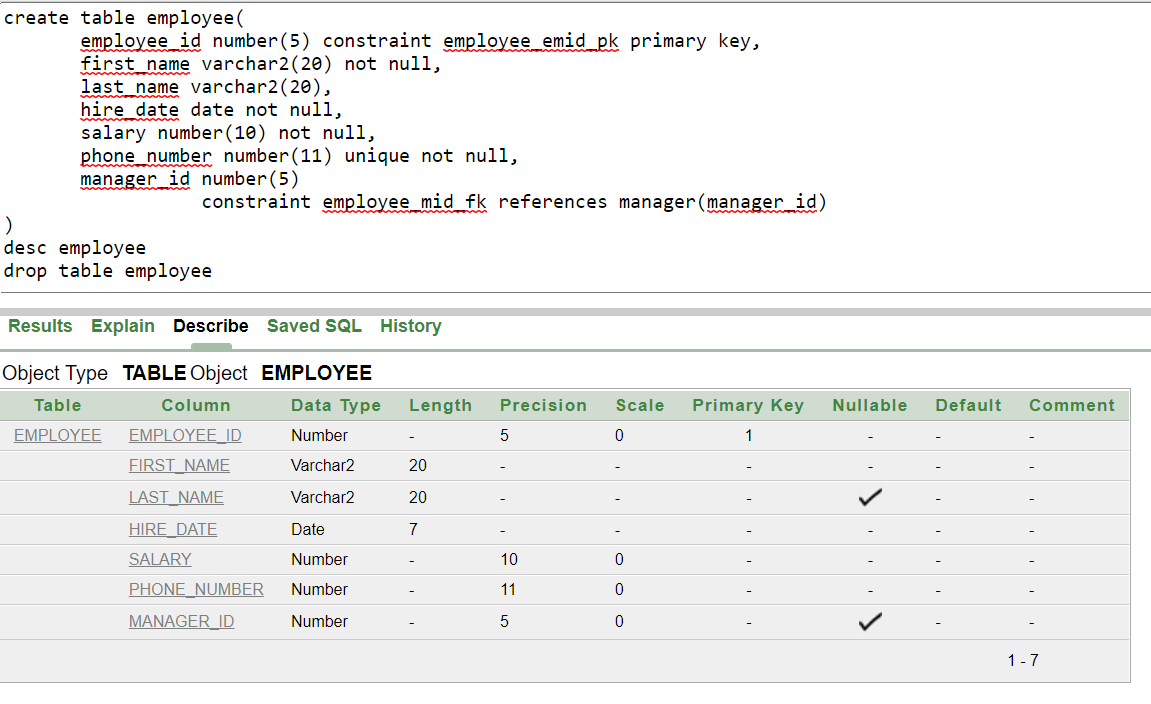
license\_plate\_number,Fine\_id

12.Fine\_id, Issue\_date,paid\_date,Amount

13.Fine\_id, Issue\_date, paid\_date,Amount,Manager\_id

Graphical user interface, application

Description automatically generated



Graphical user interface, application

Description automatically generated

Graphical user interface, text, application, table

Description automatically generated

Graphical user interface, application

Description automatically generated

Table

Description automatically generated with medium confidence

Graphical user interface, text, application

Description automatically generated

Graphical user interface, application

Description automatically generated

Graphical user interface, application

Description automatically generated

**Create Table Query:**

create table manager(

manager\_id number(5) constraint manager\_mid\_pk primary key,

first\_name varchar2(20) not null,

last\_name varchar2(20),

phone\_number number(11) unique not null,

salary number(10) not null,

address varchar2(20) not null

)

desc manager

drop table manager

create table parking\_spot(

spot\_id number(5) constraint pspot\_sid\_pk primary key,

address varchar2(20) unique not null,

manager\_id number(5)

constraint paspot\_mid\_fk references manager(manager\_id) not null

)

desc parking\_spot

drop table parking\_spot

create table parking\_space(

space\_id number(5) constraint pspace\_spid\_pk primary key,

space\_type varchar2(20)

check( space\_type in ('Small','Medium','Large')),

spot\_id number(5)

constraint pspace\_sid\_fk references parking\_spot(spot\_id) not null

)

desc parking\_space

drop table parking\_space

create table rate(

rate\_id number(5) constraint rate\_rid\_pk primary key,

hourly\_rate number(10) not null,

day\_rate number(10) not null,

type varchar2(20) check(type in ('Small','Medium','Large'))

)

desc rate

drop table rate

create table space\_rate(

space\_rate\_id number(5) constraint space\_rate\_srid\_pk primary key,

space\_id number(5)

constraint space\_rate\_spid\_fk references parking\_space(space\_id),

rate\_id number(5)

constraint space\_rate\_rid\_fk references rate(rate\_id)

)

desc space\_rate

drop table space\_rate

create table employee(

employee\_id number(5) constraint employee\_emid\_pk primary key,

first\_name varchar2(20) not null,

last\_name varchar2(20),

hire\_date date not null,

salary number(10) not null,

phone\_number number(11) unique not null,

manager\_id number(5)

constraint employee\_mid\_fk references manager(manager\_id)

)

desc employee

drop table employee

create table fine(

fine\_id number(5) constraint fine\_fid\_pk primary key,

issue\_date date not null,

paid\_date date not null,

amount number(10) not null,

manager\_id number(5)

constraint fine\_mid\_fk references manager(manager\_id)

)

desc fine

drop table fine

create table customers(

customer\_id number(5) constraint customer\_cid\_pk primary key,

first\_name varchar2(20) not null,

last\_name varchar2(20),

email varchar2(20),

address varchar2(20),

phone\_number number(5) unique not null,

license\_plate\_number varchar2(10) unique not null,

find\_id number(5)

constraint customer\_fid\_fk references fine(fine\_id)

)

desc customers

drop table customers

create table parking\_slip(

parking\_slip\_id number(5) constraint pkslip\_psid\_pk primary key,

issue\_date date not null,

expair\_date date not null,

type varchar2(20)

check(type in ('Small','Medium','Large')),

manager\_id number(5)

constraint parkingslip\_mid\_fk references manager(manager\_id) not null,

customer\_id number(5)

constraint parkingslip\_cid\_fk references customers(customer\_id) not null

)

desc parking\_slip

drop table parking\_slip