Cineplex Management System

Contents

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1. Introduction

The Project entitled as "Cineplex Management System" is mainly developed for overall management for the cineplex movie theatre. The project is helpful for managing all the information of managers, employees, tickets and shows. In our database system, we can add information about employee and manager as well as tickets and show information. We can also find all sorts of information from our database system. We can find which manager is managing which employee and which employee is selling which show ticket.

2. Case Study

In Cineplex Management System, The whole system is managed by managers. One manager can manage many employees. One show will run at a time. The attributes of manager include manager_id, manager_name, address, phone_number, email. There are many employees. The attributes of employees include employee_id, employee_name, address, phone_number, email, salary, age. Manager manages all employees. Some employees work to sell ticket. The attributes of tickets include ticket_id, ticket_name, price. Tickets for show and show has some attributes include show_id, show_name, show_date, start_ time, end _time.
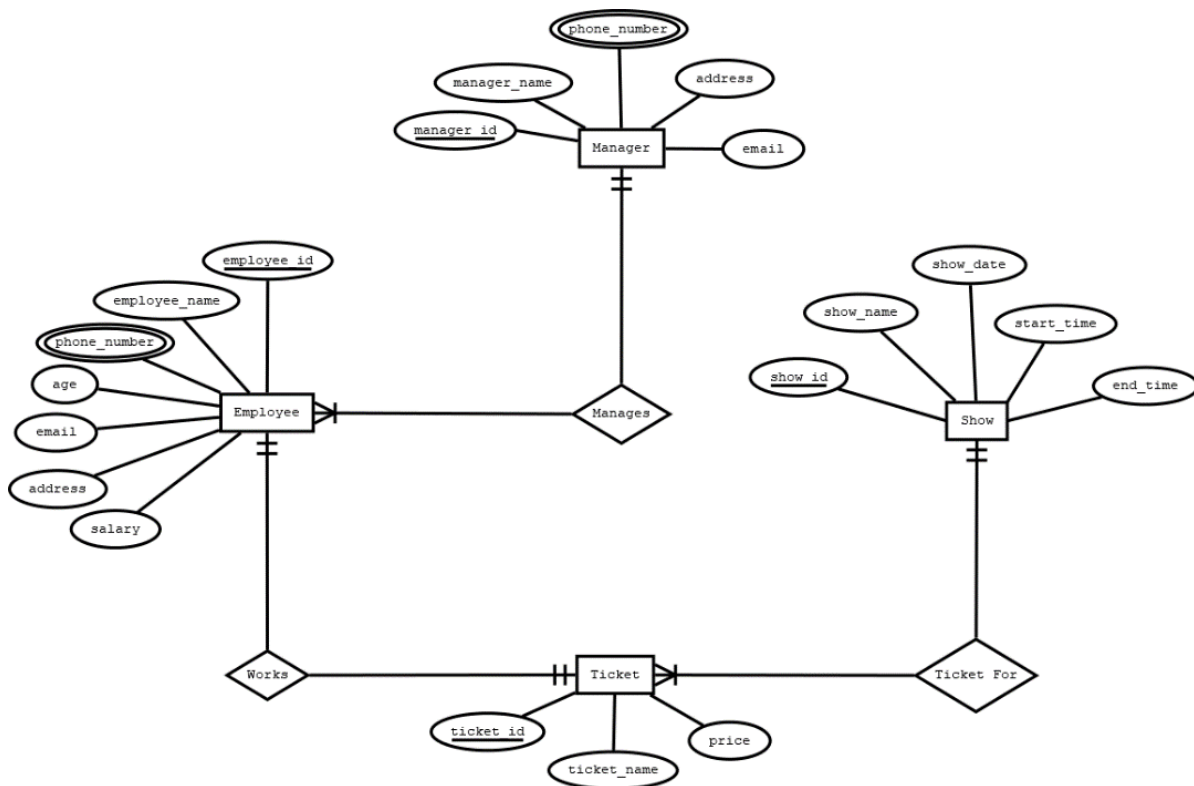
3. ER Diagram

Figure 1: ER Diagram

4. Normalization

Manages(<u>manager_id</u>, manager_name, email, address, phone_number, <u>employee_id</u>, employee_name, address, phone_number, age, email, salary)

1NF: phone_number multivalued attribute

2NF:

<u>manager_id</u>, manager_name, email, address, phone_number

<u>employee_id</u>, employee_name, address, phone_number, age, email, salary, <u>manager_id</u>

3NF:

<u>manager_id</u>, manager_name, email, address, phone_number

<u>employee_id</u>, employee_name, address, phone_number, age, email, salary, <u>manager_id</u>

no transitive dependency

Table:

<u>manager_id</u>, manager_name, email, address, phone_number

<u>employee_id</u>, employee_name, address, phone_number, age, email, salary, <u>manager_id</u>

Works(<u>ticket_id</u>, ticket_name, price , <u>employee_id</u>, employee_name, address, phone_number, age, email, salary)

1NF: phone_number multivalued attribute

2NF:

<u>ticket_id</u>, ticket_name, price , <u>employee_id</u>

<u>employee_id</u>, employee_name, address, phone_number, age, email, salary

3NF:

<u>ticket_id</u>, ticket_name, price , <u>employee_id</u>

<u>employee_id</u>, employee_name, address, phone_number, age, email, salary

no transitive dependency

Table:

<u>ticket_id</u>, ticket_name, price , <u>employee_id</u>

<u>employee_id</u>, employee_name, address, phone_number, age, email, salary

Ticket For(<u>ticket_id</u>, ticket_name, price, <u>show_id</u>, show_name, show_date, start_time, end_time)

1NF: no multivalued attribute

2NF:

<u>ticket_id</u>, ticket_name, price, <u>show_id</u>

<u>show_id</u>, show_name, show_date, start_time, end_time

3NF:

<u>ticket_id</u>, ticket_name, price, <u>show_id</u>

<u>show_id</u>, show_name, show_date, start_time, end_time

no transitive dependency

Table:

<u>ticket_id</u>, ticket_name, price, <u>show_id</u>

<u>show_id</u>, show_name, show_date, start_time, end_time

Total Table:

<u>manager_id</u>, manager_name, email, address, phone_number

<u>employee_id</u>, employee_name, address, phone_number, age, email, salary, <u>manager_id</u>

<u>ticket_id</u>, ticket_name, price<u>, employee_id</u>

~~<u>employee_id</u>, employee_name, address, phone_number, age, email, salary~~

<u>ticket_id</u>, ticket_name, price, <u>show_id</u>

<u>show_id</u>, show_name, show_date, start_time, end_time

Final Table:

<u>manager_id</u>, manager_name, email, address, phone_number

<u>employee_id</u>, employee_name, address, phone_number, age, email, salary, <u>manager_id</u>

<u>ticket_id</u>, ticket_name, price<u>, employee_id</u>

<u>ticket_id</u>, ticket_name, price, <u>show_id</u>

<u>show_id</u>, show_name, show_date, start_time, end_time

5. Table Creation

create table manager

(

manager_id varchar2(5) constraint manager_manager_id_pk primary key,

manager_name varchar2(25) not null,

address varchar2(30) not null,

phone_number number(11) unique,

email varchar2(25) unique

)

desc manager

Table	Column	Data Type	Length	Precision	Scale	Primary Key	Nullable	Default	Comment
MANAGER	MANAGER_ID	Varchar2	5	-	-	1	-	-	-
	MANAGER_NAME	Varchar2	25	-	-	-	-	-	-
	ADDRESS	Varchar2	30	-	-	-	-	-	-
	PHONE_NUMBER	Number	-	11	0	-	✓	-	-
	EMAIL	Varchar2	25	-	-	-	✓	-	-
									1 - 5

create table employee(

employee_id varchar2(5) constraint employee_employee_id_pk primary key,

employee_name varchar2(25) not null,

address varchar2(30) not null,

phone_number number(11) unique,

email varchar2(25) unique,

salary number(6) constraint employee_salary_ck check(salary>5000),

age number(2) not null,

manager_id varchar2(5) constraint employee_manager_id_fk references manager(manager_id)

)

desc employee

Table	Column	Data Type	Length	Precision	Scale	Primary Key	Nullable	Default	Comment
EMPLOYEE	EMPLOYEE_ID	Varchar2	5	-	-	1	-	-	-
	EMPLOYEE_NAME	Varchar2	25	-	-	-	-	-	-
	ADDRESS	Varchar2	30	-	-	-	-	-	-
	PHONE_NUMBER	Number	-	11	0	-	✓	-	-
	EMAIL	Varchar2	25	-	-	-	✓	-	-
	SALARY	Number	-	6	0	-	✓	-	-
	AGE	Number	-	2	0	-	-	-	-
	MANAGER_ID	Varchar2	5	-	-	-	✓	-	-
									1 - 8

create table shows(

show_id varchar2(5) constraint shows_show_id_pk primary key,

show_name varchar2(25) not null,

show_date date,

start_time varchar2(6) not null,

end_time varchar2(6) not null

)

desc shows

Table	Column	Data Type	Length	Precision	Scale	Primary Key	Nullable	Default	Comment
SHOWS	SHOW_ID	Varchar2	5	-	-	1	-	-	-
	SHOW_NAME	Varchar2	25	-	-	-	-	-	-
	SHOW_DATE	Date	7	-	-	-	✓	-	-
	START_TIME	Varchar2	6	-	-	-	-	-	-
	END_TIME	Varchar2	6	-	-	-	-	-	-
									1 - 5

create table ticket_shows

(

ticket_id varchar2(5) constraint ticket_id_pk primary key,

ticket_name varchar2(25) not null,

price number(5) default 350,

show_id varchar2(5) constraint ticket_shows_show_id_fk references shows(show_id)

)

desc ticket_shows

Table	Column	Data Type	Length	Precision	Scale	Primary Key	Nullable	Default	Comment
TICKET_SHOWS	TICKET_ID	Varchar2	5	-	-	1	-	-	-
	TICKET_NAME	Varchar2	25	-	-	-	-	-	-
	PRICE	Number	-	5	0	-	✓	350	-
	SHOW_ID	Varchar2	5	-	-	-	✓	-	-
									1 - 4

create table ticket_employee

(

ticket_id varchar2(5) constraint ticket_employee_ticket_id_pk primary key,

ticket_name varchar2(25) not null,

price number(5) default 350,

employee_id varchar2(5) constraint employee_employee_id_fk references employee(employee_id)

)

desc ticket_employee

Table	Column	Data Type	Length	Precision	Scale	Primary Key	Nullable	Default	Comment
TICKET_EMPLOYEE	TICKET_ID	Varchar2	5	-	-	1	-	-	-
	TICKET_NAME	Varchar2	25	-	-	-	-	-	-
	PRICE	Number	-	5	0	-	✓	350	-
	EMPLOYEE_ID	Varchar2	5	-	-	-	✓	-	-
									1 - 4

6. Tables Screenshot with Data
For manager

insert into manager (manager_id,manager_name,address,phone_number,email) values(1,'Sifat Rahman','Mirpur-1,Dhaka',01726789213,'srahman@gmail.com')

insert into manager (manager_id,manager_name,address,phone_number,email) values(2,'Shuvo Ali','Mirpur-1,Dhaka',01541398752,'shuvoali@gmail.com')

insert into manager (manager_id,manager_name,address,phone_number,email) values(3,'Jahid Hossen','Mirpur-10,Dhaka',01797436120,'jahidhossen@gmail.com')

insert into manager (manager_id,manager_name,address,phone_number,email) values(4,'Shara Setu','Mirpur-14,Dhaka',01815689214,'sharasetu@gmail.com')

insert into manager (manager_id,manager_name,address,phone_number,email) values(5,'Ashhad Ferdous','Mirpur-1,Dhaka',01685347925,'ashhadferdous@gmail.com')

insert into manager (manager_id,manager_name,address,phone_number,email) values(6,'Rakib Hasan','Uttara,Dhaka',01624793549,'rhossen@gmail.com')

insert into manager (manager_id,manager_name,address,phone_number,email) values(7,'Sumit Kumar','Mirpur-11,Dhaka',01612365478,'skumar@gmail.com')

insert into manager (manager_id,manager_name,address,phone_number,email) values(8,'Anik Sen','Mirpur-14,Dhaka',01915956144,'aniksen@gmail.com')

insert into manager (manager_id,manager_name,address,phone_number,email) values(9,'Zesmin Haque','Savar,Dhaka',01585341444,'zesminh@gmail.com')

insert into manager (manager_id,manager_name,address,phone_number,email) values(10,'Sanjida Akhter','Mohammadpur,Dhaka',01715674926,'sanjida@gmail.com')

select * from manager

MANAGER_ID	MANAGER_NAME	ADDRESS	PHONE_NUMBER	EMAIL
1	Sifat Rahman	Mirpur-1,Dhaka	1726789213	srahman@gmail.com
2	Shuvo Ali	Mirpur-1,Dhaka	1541398752	shuvoali@gmail.com
3	Jahid Hossen	Mirpur-10,Dhaka	1797436120	jahidhossen@gmail.com
4	Shara Setu	Mirpur-14,Dhaka	1815689214	sharasetu@gmail.com
5	Ashhad Ferdous	Mirpur-1,Dhaka	1685347925	ashhadferdous@gmail.com
6	Rakib Hasan	Uttara,Dhaka	1624793549	rhossen@gmail.com
7	Sumit Kumar	Mirpur-11,Dhaka	1612365478	skumar@gmail.com
8	Anik Sen	Mirpur-14,Dhaka	1915956144	aniksen@gmail.com
9	Zesmin Haque	Savar,Dhaka	1585341444	zesminh@gmail.com
10	Sanjida Akhter	Mohammadpur,Dhaka	1715674926	sanjida@gmail.com

For employee

insert into employee (employee_id,employee_name,address,phone_number,email,salary,age,manager_id)

values(1,'Mahmudul Hasan','Nikunja2,khilkhet',01512658972,'mhasan@gmail.com',25000,35,1)

insert into employee (employee_id,employee_name,address,phone_number,email,salary,age,manager_id)

values(2,'Abdur Rahman','Motijheel,Dhaka',01611589947,'abdurrahman@gmail.com',30000,30,1)

```
insert into employee
(employee_id,employee_name,address,phone_number,email,salary,age,manager_id)

values(3,'Mehedi Hasan','Mirpur-1,Dhaka',01325697482,'mehedih@gmail.com',37500,27,2)

insert into employee
(employee_id,employee_name,address,phone_number,email,salary,age,manager_id)

values(4,'Arif Islam','Mohammadpur,Dhaka',01715891478,'aislam@gmail.com',28000,30,2)

insert into employee
(employee_id,employee_name,address,phone_number,email,salary,age,manager_id)

values(5,'Atif Islam','Tejgaon,Dhaka',01569874620,'atifislam@gmail.com',35000,37,4)

insert into employee
(employee_id,employee_name,address,phone_number,email,salary,age,manager_id)

values(6,'Ayush Paul','Mirpur-10,Dhaka',01715987468,'ayushp@gmail.com',25000,29,6)

insert into employee
(employee_id,employee_name,address,phone_number,email,salary,age,manager_id)

values(7,'Jahid Hasan','Motijheel,Dhaka',01812659842,'jhossen@gmail.com',25000,30,6)

insert into employee
(employee_id,employee_name,address,phone_number,email,salary,age,manager_id)

values(8,'Nadim
Mazumdar','Cantonment,Dhaka',01715746214,'nadimmazumdar@gmail.com',25000,26,7)

insert into employee
(employee_id,employee_name,address,phone_number,email,salary,age,manager_id)

values(9,'Rahat Rahman','Mirpur-
14,Dhaka',01514972365,'rahatrahman@gmail.com',40000,40,9)

insert into employee
(employee_id,employee_name,address,phone_number,email,salary,age,manager_id)

values(10,'Sadia Afrin','Dhanmondi,Dhaka',01814698554,'sadiaafrin@gmail.com',25000,26,10)


select * from employee
```

EMPLOYEE_ID	EMPLOYEE_NAME	ADDRESS	PHONE_NUMBER	EMAIL	SALARY	AGE	MANAGER_ID
1	Mahmudul Hasan	Nikunja2,khilkhet	1512658972	mhasan@gmail.com	25000	35	1
2	Abdur Rahman	Motijheel,Dhaka	1611589947	abdurrahman@gmail.com	30000	30	1
3	Mehedi Hasan	mirpur-1,Dhaka	1325697482	mehedih@gmail.com	37500	27	2
4	Arif Islam	Mohammadpur,Dhaka	1715891478	aislam@gmail.com	28000	30	2
5	Atif Islam	Tejgaon,Dhaka	1569874620	atifislam@gmail.com	35000	37	4
6	Ayush Paul	Mirpur-10,Dhaka	1715987468	ayushp@gmail.com	25000	29	6
7	Jahid Hasan	Motijheel,Dhaka	1812659842	jhossen@gmail.com	25000	30	6
8	Nadim Mazumdar	Cantonment,Dhaka	1715746214	nadimmazumdar@gmail.com	25000	26	7
9	Rahat Rahman	Mirpur-14,Dhaka	1514972365	rahatrahman@gmail.com	40000	40	9
10	Sadia Afrin	Dhanmondi,Dhaka	1814698554	sadiaafrin@gmail.com	25000	26	10

For Shows

insert into shows (show_id,show_name,show_date,start_time,end_time)

values(1,'Opening-1','20-Apr-2021','09:30 AM','12:30 PM')

insert into shows (show_id,show_name,show_date,start_time,end_time)

values(2,'Opening-2','20-Apr-2021','12:30 PM','03:30 PM')

insert into shows (show_id,show_name,show_date,start_time,end_time)

values(3,'Royal','21-Apr-2021','03:00 PM','06:00 PM')

insert into shows (show_id,show_name,show_date,start_time,end_time)

values(4,'Exposure','21-Apr-2021','05:30 PM','08:30 PM')

insert into shows (show_id,show_name,show_date,start_time,end_time)

values(5,'VIP-1','22-Apr-2021','12:00 PM','03:00 PM')

insert into shows (show_id,show_name,show_date,start_time,end_time)

values(6,'VIP-2','22-Apr-2021','03:00 PM','06:00 PM')

select * from shows

SHOW_ID	SHOW_NAME	SHOW_DATE	START_TIME	END_TIME
1	Opening-1	20-APR-21	09:30 AM	12:30 PM
2	Opening-2	20-APR-21	12:30 PM	03:30 PM
3	Royal	21-APR-21	03:00 PM	06:00 PM
4	Exposure	21-APR-21	05:30 PM	08:30 PM
5	VIP-1	22-APR-21	12:00 PM	03:00 PM
6	VIP-2	22-APR-21	03:00 PM	06:00 PM

For ticket_shows

insert into ticket_shows (ticket_id,ticket_name,price,show_id) values(1,'General Ticket',400,1)

insert into ticket_shows (ticket_id,ticket_name,price,show_id) values(2,'Kids Ticket',300,1)

insert into ticket_shows (ticket_id,ticket_name,price,show_id) values(3,'General Ticket',400,2)

insert into ticket_shows (ticket_id,ticket_name,price,show_id) values(4,'Kids Ticket',300,2)

insert into ticket_shows (ticket_id,ticket_name,price,show_id) values(5,'General Ticket',400,3)

insert into ticket_shows (ticket_id,ticket_name,price,show_id) values(6,'Open Ticket',600,4)

insert into ticket_shows (ticket_id,ticket_name,price,show_id) values(7,'VIP Ticket',1000,5)

insert into ticket_shows (ticket_id,ticket_name,price,show_id) values(8,'VIP Ticket',1000,6)

select * from ticket_shows

TICKET_ID	TICKET_NAME	PRICE	SHOW_ID
1	General Ticket	400	1
2	Kids Ticket	300	1
3	General Ticket	400	2
4	Kids Ticket	300	2
5	General Ticket	400	3
6	Open Ticket	600	4
7	VIP Ticket	1000	5
8	VIP Ticket	1000	6

For ticket_employee

insert into ticket_employee(ticket_id,ticket_name,price,employee_id) values(1,'General Ticket',400,1)

insert into ticket_employee(ticket_id,ticket_name,price,employee_id) values(2,'Kids Ticket',300,2)

insert into ticket_employee(ticket_id,ticket_name,price,employee_id) values(3,'General Ticket',400,3)

insert into ticket_employee(ticket_id,ticket_name,price,employee_id) values(4,'Kids Ticket',300,4)

insert into ticket_employee(ticket_id,ticket_name,price,employee_id) values(5,'Generel Ticket',400,5)

insert into ticket_employee(ticket_id,ticket_name,price,employee_id) values(6,'Open Ticket',600,6)

insert into ticket_employee(ticket_id,ticket_name,price,employee_id) values(7,'VIP Ticket',1000,7)

insert into ticket_employee(ticket_id,ticket_name,price,employee_id) values(8,'VIP Ticket',1000,8)

select * from ticket_employee

TICKET_ID	TICKET_NAME	PRICE	EMPLOYEE_ID
1	General Ticket	400	1
2	Kids Ticket	300	2
3	General Ticket	400	3
4	Kids Ticket	300	4
5	Generel Ticket	400	5
6	Open Ticket	600	6
7	VIP Ticket	1000	7
8	VIP Ticket	1000	8

7. Query with Screenshot

Joining

1. Write a query to display the manager name for each employee using join
select e.employee_name,manager_name

from employee e,manager m

where e.manager_id=m.manager_id

EMPLOYEE_NAME	MANAGER_NAME
Mahmudul Hasan	Sifat Rahman
Abdur Rahman	Sifat Rahman
Mehedi Hasan	Shuvo Ali
Arif Islam	Shuvo Ali
Atif Islam	Shara Setu
Ayush Paul	Rakib Hasan
Jahid Hasan	Rakib Hasan
Nadim Mazumdar	Sumit Kumar
Rahat Rahman	Zesmin Haque
Sadia Afrin	Sanjida Akhter

02. Write a query to display ticket name, show name and price for all shows using join

select t.ticket_name,s.show_name, t.price

from shows s, ticket_shows t

where s.show_id=t.show_id

TICKET_NAME	SHOW_NAME	PRICE
General Ticket	Opening-1	400
Kids Ticket	Opening-1	300
General Ticket	Opening-2	400
Kids Ticket	Opening-2	300
General Ticket	Royal	400
Open Ticket	Exposure	600
VIP Ticket	VIP-1	1000
VIP Ticket	VIP-2	1000

03. Write a query to display employee id, employee name ticket id and ticket name using join

select e.employee_id, e.employee_name,t.ticket_id, ticket_name

from employee e, ticket_employee t

where e.employee_id=t.employee_id

EMPLOYEE_ID	EMPLOYEE_NAME	TICKET_ID	TICKET_NAME
1	Mahmudul Hasan	1	General Ticket
2	Abdur Rahman	2	Kids Ticket
3	Mehedi Hasan	3	General Ticket
4	Arif Islam	4	Kids Ticket
5	Atif Islam	5	Generel Ticket
6	Ayush Paul	6	Open Ticket
7	Jahid Hasan	7	VIP Ticket
8	Nadim Mazumdar	8	VIP Ticket

Sub-Query

04. Write a query to display the name and salary for all employees who earn more than employee id 5 (Employee Table)

select employee_name,salary

from employee

where salary>(select salary from employee where employee_id=5)

EMPLOYEE_NAME	SALARY
Mehedi Hasan	37500
Rahat Rahman	40000

05. Write a query to display the employee id, name and salary for all employees who earn more than the minimum salary (Employees table).

select employee_id,employee_name,salary

from employee

where salary>(select min(salary) from employee)

EMPLOYEE_ID	EMPLOYEE_NAME	SALARY
2	Abdur Rahman	30000
3	Mehedi Hasan	37500
4	Arif Islam	28000
5	Atif Islam	35000
9	Rahat Rahman	40000

06. Display the name, salary, and employee number for all employees whose salary equals one of the salaries in employee number 2

select employee_id,employee_name,salary

from employee

where salary >any(select salary from employee where employee_id=2)

EMPLOYEE_ID	EMPLOYEE_NAME	SALARY
9	Rahat Rahman	40000
3	Mehedi Hasan	37500
5	Atif Islam	35000

Single row function
07. Create a query to display the name and salary of employees earning more than $30000

select employee_name,salary

from employee

where salary>30000

EMPLOYEE_NAME	SALARY
Mehedi Hasan	37500
Atif Islam	35000
Rahat Rahman	40000

Group function
08. Write a query to display maximum salary, minimum salary, sum of salary for employee table

select max(salary),min(salary),sum(salary)
from employee

MAX(SALARY)	MIN(SALARY)	SUM(SALARY)
40000	25000	295500

09. Display number of employees earns $25000 per month in employee table.

select count(*)

from employee

where salary=25000

COUNT(*)
5

View

10. Write a query to create a view named empmanvu to find employee id, employee name, manager id and manager name.

create or replace view empmanvu
as select e.employee_id,e.employee_name,m.manager_id,m.manager_name
from employee e,manager m
where e.manager_id=m.manager_id

select * from empmanvu

EMPLOYEE_ID	EMPLOYEE_NAME	MANAGER_ID	MANAGER_NAME
1	Mahmudul Hasan	1	Sifat Rahman
2	Abdur Rahman	1	Sifat Rahman
3	Mehedi Hasan	2	Shuvo Ali
4	Arif Islam	2	Shuvo Ali
5	Atif Islam	4	Shara Setu
6	Ayush Paul	6	Rakib Hasan
7	Jahid Hasan	6	Rakib Hasan
8	Nadim Mazumdar	7	Sumit Kumar
9	Rahat Rahman	9	Zesmin Haque
10	Sadia Afrin	10	Sanjida Akhter