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Database Management Systems Laboratory Assignment

WEEK-3

-by **PRASHANT BHARTI**

(202251102)

Exercise 1

1. Inner join

```
30
31 • select * from staff;
32 • select * from payment;
33 • truncate table payment;
34 • drop table payment;
35
36 • select *
37   from staff
38   inner join payment
39   on staff.id=payment.staff_id;
40
```

Result Grid | | Filter Rows: | Export: | Wrap Cell Content:

| | Id | Staff_name | Staff_age | Staff_address | Monthly_package | Payment_Id | Date | Staff_Id | AMOUNT |
|---|----|------------|-----------|---------------|-----------------|------------|------------|----------|--------|
| ▶ | 1 | Aryan | 22 | Mumbai | 18000 | 101 | 30/12/2009 | 1 | 3000 |
| | 3 | Monty | 25 | Mohali | 22000 | 102 | 22/02/2010 | 3 | 2500 |
| | 4 | Amit | 20 | Allahabad | 12000 | 103 | 30/02/2010 | 4 | 3500 |

Result 56 x

2. Left join

```

40
41 • select *
42 from staff
43 left join payment
44 on staff.id=payment.staff_id;
45

```

| Result Grid | | | | | | | | | |
|-----------------------------------|----|------------|-----------|---------------|-----------------|------------|------------|----------|--------|
| Filter Rows: <input type="text"/> | | | | | | | | | |
| Export: Wrap Cell Content: | | | | | | | | | |
| | Id | Staff_name | Staff_age | Staff_address | Monthly_package | Payment_Id | Date | Staff_Id | AMOUNT |
| ▶ | 1 | Aryan | 22 | Mumbai | 18000 | 101 | 30/12/2009 | 1 | 3000 |
| | 2 | Sushil | 32 | Delhi | 20000 | NULL | NULL | NULL | NULL |
| | 3 | Monty | 25 | Mohali | 22000 | 102 | 22/02/2010 | 3 | 2500 |
| | 4 | Amit | 20 | Allahabad | 12000 | 103 | 30/02/2010 | 4 | 3500 |

Result 57 ×

3. Right join

```

45
46 • select *
47 from staff
48 join payment
49 on staff.id=payment.staff_id;
50

```

| Result Grid | | | | | | | | | |
|-----------------------------------|----|------------|-----------|---------------|-----------------|------------|------------|----------|--------|
| Filter Rows: <input type="text"/> | | | | | | | | | |
| Export: Wrap Cell Content: | | | | | | | | | |
| | Id | Staff_name | Staff_age | Staff_address | Monthly_package | Payment_Id | Date | Staff_Id | AMOUNT |
| ▶ | 1 | Aryan | 22 | Mumbai | 18000 | 101 | 30/12/2009 | 1 | 3000 |
| | 3 | Monty | 25 | Mohali | 22000 | 102 | 22/02/2010 | 3 | 2500 |
| | 4 | Amit | 20 | Allahabad | 12000 | 103 | 30/02/2010 | 4 | 3500 |

Result 58 ×

4. Full join

```

50
51 • select *
52 from staff
53 left join payment
54 on staff.id=payment.staff_id
55 union
56 select *
57 from staff
58 right join payment
59 on staff.id=payment.staff_id;
60

```

| Result Grid | | | | | | | | | |
|-----------------------------------|----|------------|-----------|---------------|-----------------|------------|------------|----------|--------|
| Filter Rows: <input type="text"/> | | | | | | | | | |
| Export: Wrap Cell Content: | | | | | | | | | |
| | Id | Staff_name | Staff_age | Staff_address | Monthly_package | Payment_Id | Date | Staff_Id | AMOUNT |
| ▶ | 1 | Aryan | 22 | Mumbai | 18000 | 101 | 30/12/2009 | 1 | 3000 |
| | 2 | Sushil | 32 | Delhi | 20000 | NULL | NULL | NULL | NULL |
| | 3 | Monty | 25 | Mohali | 22000 | 102 | 22/02/2010 | 3 | 2500 |
| | 4 | Amit | 20 | Allahabad | 12000 | 103 | 30/02/2010 | 4 | 3500 |

Result 59 ✕

Exercise B-1

Creating Tables

```

60
61  -- B1-----
62  ● create table customer(
63      customer_id int,
64      c_name varchar(10),
65      Email varchar(30),
66      Address varchar(20),
67      primary key (customer_id)
68  );
69  ● create table orders (
70      Order_id int,
71      Customer_id int ,
72      Date varchar(20),
73      Contact bigint,
74      primary key (Order_id),
75      foreign key (Customer_id) references customer(Customer_id)
76  );
77  ● select * from customer;
78  ● select * from orders;
79  ● drop table orders;
80
81  ● insert into customer values
82      (100,"Aarav","aarav@gmail.com","Ahemdabad"),
83      (101,"Aryan","Aryan@yahoo.com","Delhi"),
84      (102,"Dhruv","Dhruv@outlook.com","Mumbai"),
85      (103,"Nitya","Nitya@gmail.com","Pune"),
86      (104,"Vikram","Vikram@yahoo.com","Chennai"),
87      (105,"Yuvika","Yuvika@gmail.com","Kolkata");
88
89  ● INSERT INTO orders VALUES
90      (2022511021, 100, '2024-02-09', 9123456789),
91      (2022511026, 101, '2024-02-10', 7876543210),
92      (2022511027, 102, '2024-02-11', 8567890123),
93      (2022511028, 103, '2024-02-12', 9890123456),
94      (2022511029, 104, '2024-02-13', 7345678901),
95      (2022511020, 105, '2024-02-14', 6678901234);

```

Customer table

| customer_id | c_name | Email | Address |
|-------------|--------|-------------------|-----------|
| 100 | Aarav | aarav@gmail.com | Ahemdabad |
| 101 | Aryan | Aryan@yahoo.com | Delhi |
| 102 | Dhruv | Dhruv@outlook.com | Mumbai |
| 103 | Nitya | Nitya@gmail.com | Pune |
| 104 | Vikram | Vikram@yahoo.com | Chennai |
| 105 | Yuvika | Yuvika@gmail.com | Kolkata |
| NULL | NULL | NULL | NULL |

customer 60 x Apply

Orders table

| Result Grid | | | | |
|----------------|-------------|--------------------|------------|--|
| Filter Rows: | | Edit: | | |
| Export/Import: | | Wrap Cell Content: | | |
| Order_id | Customer_id | Date | Contact | |
| 2022511020 | 105 | 2024-02-14 | 6678901234 | |
| 2022511021 | 100 | 2024-02-09 | 9123456789 | |
| 2022511026 | 101 | 2024-02-10 | 7876543210 | |
| 2022511027 | 102 | 2024-02-11 | 8567890123 | |
| 2022511028 | 103 | 2024-02-12 | 9890123456 | |
| 2022511029 | 104 | 2024-02-13 | 7345678901 | |
| NULL | NULL | NULL | NULL | |

orders 61 x Apply

Queries

1.

```

98 • select customer_id,c_name
99   from customer
100  where email like "%gmail%";
101

```

| Result Grid | | | | |
|----------------|--------|--------------------|--|--|
| Filter Rows: | | Edit: | | |
| Export/Import: | | Wrap Cell Content: | | |
| customer_id | c_name | | | |
| 100 | Aarav | | | |
| 103 | Nitya | | | |
| 105 | Yuvika | | | |
| NULL | NULL | | | |

customer 62 x Apply

2.

```

102 • select *
103   from customer
104  where c_name not like "a%";
105

```

| Result Grid | | | | |
|----------------|--------|--------------------|---------|--|
| Filter Rows: | | Edit: | | |
| Export/Import: | | Wrap Cell Content: | | |
| customer_id | c_name | Email | Address | |
| 102 | Dhruv | Dhruv@outlook.com | Mumbai | |
| 103 | Nitya | Nitya@gmail.com | Pune | |
| 104 | Vikram | Vikram@yahoo.com | Chennai | |
| 105 | Yuvika | Yuvika@gmail.com | Kolkata | |
| NULL | NULL | NULL | NULL | |

customer 63 x Apply

3.

```
105
106 • select c_name,date,contact,email,address
107 from customer
108 join orders
109 where customer.customer_id=orders.customer_id;
```

Result Grid | Filter Rows: | Edit: | Export/Import: | Wrap Cell Content: |

| | customer_id | c_name | Email | Address |
|---|-------------|--------|-------------------|---------|
| ▶ | 102 | Dhruv | Dhruv@outlook.com | Mumbai |
| | 103 | Nitya | Nitya@gmail.com | Pune |
| | 104 | Vikram | Vikram@yahoo.com | Chennai |
| | 105 | Yuvika | Yuvika@gmail.com | Kolkata |
| * | NULL | NULL | NULL | NULL |

customer 63 x Apply

4.

```
110
111 • select customer.customer_id,c_name,email,address,contact
112 from customer
113 join orders
114 on customer.customer_id=orders.customer_id;
115
```

Result Grid | Filter Rows: | Export: | Wrap Cell Content: |

| | customer_id | c_name | email | address | contact |
|---|-------------|--------|-------------------|-----------|------------|
| ▶ | 100 | Aarav | aarav@gmail.com | Ahemdabad | 9123456789 |
| | 101 | Aryan | Aryan@yahoo.com | Delhi | 7876543210 |
| | 102 | Dhruv | Dhruv@outlook.com | Mumbai | 8567890123 |
| | 103 | Nitya | Nitya@gmail.com | Pune | 9890123456 |
| | 104 | Vikram | Vikram@yahoo.com | Chennai | 7345678901 |
| | 105 | Yuvika | Yuvika@gmail.com | Kolkata | 6678901234 |

Result 64 x

Exercise B-2

Create Tables

```

116  -- B2-----
117  • create table Books (
118      ISBN int ,
119      Title varchar(50),
120      Unit_price int,
121      Author_Name varchar(40),
122      Publisher_name varchar(40),
123      Publish_year int ,
124      primary key (ISBN,Author_Name)
125  );
126  • create table authors (
127      Author varchar(40) primary key,
128      Country varchar(40),
129      ISBN int ,
130      foreign key (ISBN ,Author) references Books (ISBN,Author_Name)
131  );
132
133
134  • INSERT INTO Books (ISBN, Title, Unit_price, Author_Name, Publisher_name, Publish_year)
135      VALUES
136      (1001, 'Harry Potter', 3100, 'J.K. Rowling', 'Scholastic Press', 1998),
137      (1002, 'The Hitchhiker''s Guide to the Galaxy', 4500, 'Douglas Adams', 'Mass Market paperback', 2000),
138      (1003, 'Changeling', 800, 'Delia Sherman', 'Springer', 2008),
139      (1004, 'Giving Good Weight', 1280, 'John McPhee', 'Spiegel and Grau', 2006),
140      (1005, 'Writing', 1700, 'Marguerite Duras', 'Paperback', 2001);
141
142  • INSERT INTO authors (Author, Country)
143      VALUES
144      ('J.K. Rowling', 'U.K'),
145      ('Douglas Adams', 'U.K'),
146      ('Delia Sherman', 'Japan'),
147      ('John McPhee', 'U.S.A'),
148      ('Marguerite Duras', 'Germany');

```

Books table

Result Grid

Filter Rows:

Edit:

Export/Import:

Wrap Cell Content:

| | ISBN | Title | Unit_price | Author_Name | Publisher_name | Publish_year |
|--|------|--------------------------------------|------------|------------------|-----------------------|--------------|
| | 1001 | Harry Potter | 3100 | J.K. Rowling | Scholastic Press | 1998 |
| | 1002 | The Hitchhiker's Guide to the Galaxy | 4500 | Douglas Adams | Mass Market paperback | 2000 |
| | 1003 | Changeling | 800 | Delia Sherman | Springer | 2008 |
| | 1004 | Giving Good Weight | 1280 | John McPhee | Spiegel and Grau | 2006 |
| | 1005 | Writing | 1700 | Marguerite Duras | Paperback | 2001 |
| | NULL | NULL | NULL | NULL | NULL | NULL |

books 65

Apply

Author table

Result Grid

Filter Rows:

Edit:

Export/Import:

Wrap Cell Content:

| | Author | Country | ISBN |
|---|------------------|---------|------|
| ▶ | Delia Sherman | Japan | NULL |
| | Douglas Adams | U.K | NULL |
| | J.K. Rowling | U.K | NULL |
| | John McPhee | U.S.A | NULL |
| | Marguerite Duras | Germany | NULL |
| * | NULL | NULL | NULL |

authors 66

×

Apply

Queries

1.

```
153 -- 1
154 • select count(title) as book_count
155 from books;
```

| Result Grid | | Filter Rows: | Export: | Wrap Cell Content: |
|-------------|------------|--------------|---------|--------------------|
| | book_count | | | |
| ▶ | 5 | | | |

2.

```
157 -- 2
158 • select*
159 from books
160 limit 3;
161
```

| Result Grid | | Filter Rows: | Edit: | Export/Import: | Wrap Cell Content: | Fetch rows: |
|-------------|------|--------------------------------------|------------|----------------|-----------------------|--------------|
| | ISBN | Title | Unit_price | Author_Name | Publisher_name | Publish_year |
| ▶ | 1001 | Harry Potter | 3100 | J.K. Rowling | Scholastic Press | 1998 |
| | 1002 | The Hitchhiker's Guide to the Galaxy | 4500 | Douglas Adams | Mass Market paperback | 2000 |
| | 1003 | Changeling | 800 | Delia Sherman | Springer | 2008 |
| * | NULL | NULL | NULL | NULL | NULL | NULL |

books 70 x Apply

3.

```
162 -- 3
163 • select Title
164 from books
165 where unit_price between 1000 and 3000;
```

| Result Grid | | Filter Rows: | Export: | Wrap Cell Content: |
|-------------|--------------------|--------------|---------|--------------------|
| | Title | | | |
| ▶ | Giving Good Weight | | | |
| | Writing | | | |

books 71 x Read Only

4.

```

167      -- 4
168      • select Title ,author_name,country,publish_year
169      from books
170      join authors
171      where books.author_name=authors.author
172      and publish_year=2000;

```

| Result Grid | | | | |
|-------------|--------------------------------------|---------------|---------|--------------|
| | Title | author_name | country | publish_year |
| ▶ | The Hitchhiker's Guide to the Galaxy | Douglas Adams | U.K | 2000 |

Result 75 x Read Only

5.

```

174      -- 5
175      • select Title
176      from books
177      where publisher_name in ("Scholastic Press" , "Paperback" );
178

```

| Result Grid | |
|-------------|----------------------|
| | Title |
| ▶ | Harry Potter Writing |

6.

```

179      -- 6
180      • select Title ,author_name,country
181      from books
182      join authors
183      ON books.author_name=authors.author;
184

```

| Result Grid | | | |
|-------------|--------------------------------------|------------------|---------|
| | Title | author_name | country |
| ▶ | Harry Potter | J.K. Rowling | U.K |
| | The Hitchhiker's Guide to the Galaxy | Douglas Adams | U.K |
| | Changeling | Delia Sherman | Japan |
| | Giving Good Weight | John McPhee | U.S.A |
| | Writing | Marguerite Duras | Germany |

Result 77 x Read Only

7.

```

185  -- 7
186  • select author_name ,Title ,country
187  from books
188  join authors_
189  ON books.author_name=authors.author
190  and country= 'U.K';

```

| Result Grid | | | |
|-----------------------------------|---------------|--------------------------------------|---------|
| Filter Rows: <input type="text"/> | | | |
| Export: | | | |
| Wrap Cell Content: | | | |
| | author_name | Title | country |
| ▶ | J.K. Rowling | Harry Potter | U.K |
| | Douglas Adams | The Hitchhiker's Guide to the Galaxy | U.K |

Exercise B-3

Create tables

```

193  • create table salesman(
194  salesman_id int primary key,
195  name varchar(20),
196  city varchar(20),
197  commission float
198  );
199  • create table customers(
200  customer_id int,
201  cust_name varchar(20),
202  city varchar(20),
203  grade int,
204  salesman_id int,
205  foreign key (salesman_id) references salesman(salesman_id)
206  );
207
208  • INSERT INTO salesman (salesman_id, name, city, commission)
209  VALUES
210  (5001, 'James Hoog', 'New York', 0.15),
211  (5002, 'Nailil Knite', 'Paris ', 0.13),
212  (5005, 'Pit Alex', 'London', 0.11),
213  (5006, 'Mc Lyon', 'Paris', 0.14),
214  (5007, 'Paul Adam', 'Rome', 0.12);
215
216  • INSERT INTO customers (customer_id, cust_name, city, grade, salesman_id)
217  VALUES
218  (101, 'Brad Corp', 'New York', 300, '5001'),
219  (102, 'Becky Ltd', 'California', 200, '5002'),
220  (103, 'William Inc', 'London', 100, '5005'),
221  (104, 'Steve Co', 'Paris', 100, '5006'),
222  (105, 'Justin Ltd', 'New Jersey', 300, '5007');
223
224

```

Salesman table

| Result Grid | | | | |
|--|-------------|--------------|----------|------------|
| Filter Rows: <input type="text"/> | | | | |
| Edit: Export/Import: Wrap Cell Content: | | | | |
| | salesman_id | name | city | commission |
| ▶ | 5001 | James Hoog | New York | 0.15 |
| | 5002 | Nailil Knite | Paris | 0.13 |
| | 5005 | Pit Alex | London | 0.11 |
| | 5006 | Mc Lyon | Paris | 0.14 |
| | 5007 | Paul Adam | Rome | 0.12 |
| * | NULL | NULL | NULL | NULL |

salesman 79 × Apply

Customers table

| Result Grid | | | | | |
|-----------------------------------|-------------|-------------|------------|-------|-------------|
| Filter Rows: <input type="text"/> | | | | | |
| Export: Wrap Cell Content: | | | | | |
| | customer_id | cust_name | city | grade | salesman_id |
| ▶ | 101 | Brad Corp | New York | 300 | 5001 |
| | 102 | Becky Ltd | California | 200 | 5002 |
| | 103 | William Inc | London | 100 | 5005 |
| | 104 | Steve Co | Paris | 100 | 5006 |
| | 105 | Justin Ltd | New Jersey | 300 | 5007 |

customers 80 × Read Only

Queries

1.

```

228      -- 1
229 • SET SQL_SAFE_UPDATES = 0;
230 • update salesman
231     set commission = commission+commission*0.15;
232

```

| Result Grid | | | | |
|--|-------------|--------------|----------|------------|
| Filter Rows: <input type="text"/> | | | | |
| Edit: Export/Import: Wrap Cell Content: | | | | |
| | salesman_id | name | city | commission |
| ▶ | 5001 | James Hoog | New York | 0.1725 |
| | 5002 | Nailil Knite | Paris | 0.1495 |
| | 5005 | Pit Alex | London | 0.1265 |
| | 5006 | Mc Lyon | Paris | 0.161 |
| | 5007 | Paul Adam | Rome | 0.138 |
| * | NULL | NULL | NULL | NULL |

salesman 82 × Apply

2.

```
233 -- 2
234 • select name ,cust_name, salesman.city as salesman_city ,customers.city as customer_city
235 from salesman
236 join customers
237 on salesman.city = customers.city;
238
```

Result Grid | Filter Rows: | Export: | Wrap Cell Content: |

| | name | cust_name | salesman_city | customer_city |
|---|------------|-------------|---------------|---------------|
| ▶ | James Hoog | Brad Corp | New York | New York |
| | Pit Alex | William Inc | London | London |
| | Mc Lyon | Steve Co | Paris | Paris |

Result 83 ×

Read Only

3.

```
239 -- 3
240 • select salesman.salesman_id , name, salesman. city, commission
241 from salesman
242 join customers
243 on salesman.salesman_id = customers.salesman_id
244 and salesman.city != customers.city;
```

Result Grid | Filter Rows: | Export: | Wrap Cell Content: |

| | salesman_id | name | city | commission |
|---|-------------|--------------|-------|------------|
| ▶ | 5002 | Nailil Knite | Paris | 0.1495 |
| | 5007 | Paul Adam | Rome | 0.138 |

Result 85 ×

Read Only

-----THE END-----

-----THANK YOU-----