

Q1. Show all employees with their department names using Inner Join.

```
C2-92596-Manisha [db2]>select employees.employee_name,employees.dept_id,departments.dept_name
-> from employees inner join departments on employees.dept_id=departments.dept_id;
```

employee_name	dept_id	dept_name
ram	101	hr
shayam	102	finance
sita	101	hr

```
3 rows in set (0.00 sec)
```

2. Show all employees and their department names, if any, using Left Join.

```
C2-92596-Manisha [db2]>select employees.employee_name,employees.dept_id,departments.dept_name
-> from employees left join departments on employees.dept_id=departments.dept_id;
```

employee_name	dept_id	dept_name
ram	101	hr
shayam	102	finance
geeta	103	NULL
sita	101	hr

3. Show all departments with their employees, if any, using Right Join.

```
C2-92596-Manisha [db2]>select employees.employee_name,employees.dept_id,departments.dept_name
-> from employees right join departments on employees.dept_id=departments.dept_id;
```

employee_name	dept_id	dept_name
sita	101	hr
ram	101	hr
shayam	102	finance
NULL	NULL	marketing

```
4 rows in set (0.00 sec)
```

Q2-1. Display the total count of books in each subject using GROUP BY.

```
C2-92596-Manisha [db2]>SELECT subject, COUNT(*) AS total_books
-> FROM books
-> GROUP BY subject;
```

subject	total_books
C Programming	4
C++ Programming	3
Java Programming	3
Operating Systems	3

```
4 rows in set (0.00 sec)
```

2. Display the subjects that have more than 2 books using GROUP BY and HAVING.

```
C2-92596-Manisha [db2]>SELECT subject, COUNT(*) AS total_books
-> FROM books
-> GROUP BY subject
-> HAVING COUNT(*) > 2;
```

subject	total_books
C Programming	4
C++ Programming	3
Java Programming	3
Operating Systems	3

4 rows in set (0.00 sec)

3. Display the books in descending order of their price.

```
C2-92596-Manisha [db2]>SELECT * from books
-> order by price desc;
```

id	name	author	subject	price
2003	C++ Programming Language	Bjarne Stroustrup	C++ Programming	987.213
2002	C++ Primer	Stanley Lippman	C++ Programming	620.665
3002	Core Java Volume I	Cay Horstmann	Java Programming	575.651
4001	Operating System Concepts	Peter Galvin	Operating Systems	567.391
3001	Java Complete Reference	Herbert Schildt	Java Programming	525.121
3003	Java Programming Language	James Gosling	Java Programming	458.238
4002	Design of UNIX Operating System	Mauris J Bach	Operating Systems	421.938
2001	C++ Complete Reference	Herbert Schildt	C++ Programming	417.764
1002	Pointers in C	Yashwant Kanetkar	C Programming	371.019
4003	UNIX Internals	Uresh Vahalia	Operating Systems	352.822
1003	ANSI C Programming	E Balaguruswami	C Programming	334.215
1004	ANSI C Programming	Dennis Ritchie	C Programming	140.121
1001	Exploring C	Yashwant Kanetkar	C Programming	123.456

13 rows in set (0.00 sec)

4. Display the total number of books written by each author using GROUP BY.

```
C2-92596-Manisha [db2]>SELECT author,count(*) FROM books GROUP BY author;
```

author	count(*)
Yashwant Kanetkar	2
E Balaguruswami	1
Dennis Ritchie	1
Herbert Schildt	2
Stanley Lippman	1
Bjarne Stroustrup	1
Cay Horstmann	1
James Gosling	1
Peter Galvin	1
Mauris J Bach	1
Uresh Vahalia	1

```
11 rows in set (0.00 sec)
```

5. Display the authors who have written more than one book using GROUP BY and HAVING.

```
C2-92596-Manisha [db2]>select author ,count(*) from books group by author having count(*)>1;
```

author	count(*)
Yashwant Kanetkar	2
Herbert Schildt	2

```
2 rows in set (0.00 sec)
```

6. Display the subject-wise highest book price using GROUP BY.

```
C2-92596-Manisha [db2]>select subject ,max(price) from books  
-> group by subject;
```

subject	max(price)
C Programming	371.019
C++ Programming	987.213
Java Programming	575.651
Operating Systems	567.391

7. Display the subject-wise average book price using GROUP BY.

```
C2-92596-Manisha [db2]>select subject ,avg(price) from books
-> group by subject;
+-----+-----+
| subject          | avg(price) |
+-----+-----+
| C Programming    | 242.2027500 |
| C++ Programming  | 675.2140000 |
| Java Programming | 519.6700000 |
| Operating Systems| 447.3836667 |
+-----+-----+
4 rows in set (0.00 sec)
```

8. Display the books where the price is higher than the average price of their respective subject using GROUP BY and HAVING.

```
C2-92596-Manisha [db2]>SELECT *
-> FROM books
-> WHERE price > (
->   SELECT AVG(price)
->   FROM books AS b2
->   WHERE b2.subject = books.subject
-> );
+-----+-----+-----+-----+
| id | name                | author          | subject          | price |
+-----+-----+-----+-----+
| 1002 | Pointers in C       | Yashwant Kanetkar | C Programming    | 371.019 |
| 1003 | ANSI C Programming  | E Balaguruswami  | C Programming    | 334.215 |
| 2003 | C++ Programming Language | Bjarne Stroustrup | C++ Programming  | 987.213 |
| 3001 | Java Complete Reference | Herbert Schildt   | Java Programming | 525.121 |
| 3002 | Core Java Volume I   | Cay Horstmann    | Java Programming | 575.651 |
| 4001 | Operating System Concepts | Peter Galvin     | Operating Systems | 567.391 |
+-----+-----+-----+-----+
6 rows in set (0.00 sec)
```

9. Display the books in ascending order of the author's name.

```
C2-92596-Manisha [db2]>select * from books
-> order by author;
+-----+-----+-----+-----+
| id | name                | author          | subject          | price |
+-----+-----+-----+-----+
| 2003 | C++ Programming Language | Bjarne Stroustrup | C++ Programming  | 987.213 |
| 3002 | Core Java Volume I       | Cay Horstmann    | Java Programming | 575.651 |
| 1004 | ANSI C Programming       | Dennis Ritchie   | C Programming    | 140.121 |
| 1003 | ANSI C Programming       | E Balaguruswami  | C Programming    | 334.215 |
| 2001 | C++ Complete Reference    | Herbert Schildt   | C++ Programming  | 417.764 |
| 3001 | Java Complete Reference   | Herbert Schildt   | Java Programming | 525.121 |
| 3003 | Java Programming Language | James Gosling    | Java Programming | 458.238 |
| 4002 | Design of UNIX Operating System | Mauris J Bach    | Operating Systems | 421.938 |
| 4001 | Operating System Concepts | Peter Galvin     | Operating Systems | 567.391 |
| 2002 | C++ Primer               | Stanley Lippman   | C++ Programming  | 620.665 |
| 4003 | UNIX Internals            | Uresh Vahalia    | Operating Systems | 352.822 |
| 1001 | Exploring C               | Yashwant Kanetkar | C Programming    | 123.456 |
| 1002 | Pointers in C            | Yashwant Kanetkar | C Programming    | 371.019 |
+-----+-----+-----+-----+
13 rows in set (0.00 sec)
```

10. Display the subject-wise sum of book prices and filter the subjects where the sum of prices is more than 1000 using GROUP BY and HAVING.

```
C2-92596-Manisha [db2]>SELECT name, subject, price
-> FROM books b
-> WHERE price > (
->   SELECT AVG(price)
->   FROM books
->   WHERE subject = b.subject
-> );
```

name	subject	price
Pointers in C	C Programming	371.019
ANSI C Programming	C Programming	334.215
C++ Programming Language	C++ Programming	987.213
Java Complete Reference	Java Programming	525.121
Core Java Volume I	Java Programming	575.651
Operating System Concepts	Operating Systems	567.391

6 rows in set (0.00 sec)