**SQL:**

**Join:**

mysql> use std;

Database changed

mysql> describe book;

+---------+-------------+------+-----+---------+-------+

| Field | Type | Null | Key | Default | Extra |

+---------+-------------+------+-----+---------+-------+

| b\_is | int | YES | | NULL | |

| title | varchar(30) | YES | | NULL | |

| p\_name | varchar(30) | YES | | NULL | |

| pri | int | YES | | NULL | |

| date\_pb | date | YES | | NULL | |

+---------+-------------+------+-----+---------+-------+

5 rows in set (0.00 sec)

mysql> insert into book (b\_is,title,p\_name,pri,date\_pb)values(1,"abc","ram",90,("2013-03-12")),(2,"pqr","pranav",70,("2024-12-23")),(

3,"xyz","yash",50,("2021-10-11"));

Query OK, 3 rows affected (0.01 sec)

Records: 3 Duplicates: 0 Warnings: 0

mysql> select \* from book;

+------+-------+--------+------+------------+

| b\_is | title | p\_name | pri | date\_pb |

+------+-------+--------+------+------------+

| 1 | abc | xyz | 90 | 2024-11-04 |

| 1 | abc | ram | 90 | 2013-03-12 |

| 2 | pqr | pranav | 70 | 2024-12-23 |

| 3 | xyz | yash | 50 | 2021-10-11 |

+------+-------+--------+------+------------+

4 rows in set (0.00 sec)

mysql> create table author(b\_is int,ath\_name varchar(30),ath\_cit

y varchar(20));

Query OK, 0 rows affected (0.03 sec)

mysql> describe author;

+----------+-------------+------+-----+---------+-------+

| Field | Type | Null | Key | Default | Extra |

+----------+-------------+------+-----+---------+-------+

| b\_is | int | YES | | NULL | |

| ath\_name | varchar(30) | YES | | NULL | |

| ath\_city | varchar(20) | YES | | NULL | |

+----------+-------------+------+-----+---------+-------+

3 rows in set (0.00 sec)

mysql> insert into author(b\_is,ath\_name,ath\_city)values(1,"rohan"> ","pune"),(2,"sahil","phaltan");

Query OK, 2 rows affected (0.01 sec)

Records: 2 Duplicates: 0 Warnings: 0

mysql>

mysql> select \* from author;

+------+----------+----------+

| b\_is | ath\_name | ath\_city |

+------+----------+----------+

| 1 | rohan

| pune |

| 2 | sahil | phaltan |

+------+----------+----------+

2 rows in set (0.00 sec)

mysql> select \* from book;

+------+-------+--------+------+------------+

| b\_is | title | p\_name | pri | date\_pb |

+------+-------+--------+------+------------+

| 1 | abc | xyz | 90 | 2024-11-04 |

| 1 | abc | ram | 90 | 2013-03-12 |

| 2 | pqr | pranav | 70 | 2024-12-23 |

| 3 | xyz | yash | 50 | 2021-10-11 |

+------+-------+--------+------+------------+

4 rows in set (0.00 sec)

mysql> select \* from book inner join author on book.b\_is=author.b\_is;

+------+-------+--------+------+------------+------+----------+----------+

| b\_is | title | p\_name | pri | date\_pb | b\_is | ath\_name | ath\_city |

+------+-------+--------+------+------------+------+----------+----------+

| 1 | abc | xyz | 90 | 2024-11-04 | 1 | rohan

| pune |

| 1 | abc | ram | 90 | 2013-03-12 | 1 | rohan

| pune |

| 2 | pqr | pranav | 70 | 2024-12-23 | 2 | sahil | phaltan |

+------+-------+--------+------+------------+------+----------+----------+

3 rows in set (0.01 sec)

mysql> select \* from book left join author on book.b\_is=author.b\_is;

+------+-------+--------+------+------------+------+----------+----------+

| b\_is | title | p\_name | pri | date\_pb | b\_is | ath\_name | ath\_city |

+------+-------+--------+------+------------+------+----------+----------+

| 1 | abc | xyz | 90 | 2024-11-04 | 1 | rohan

| pune |

| 1 | abc | ram | 90 | 2013-03-12 | 1 | rohan

| pune |

| 2 | pqr | pranav | 70 | 2024-12-23 | 2 | sahil | phaltan |

| 3 | xyz | yash | 50 | 2021-10-11 | NULL | NULL | NULL |

+------+-------+--------+------+------------+------+----------+----------+

4 rows in set (0.01 sec)

mysql> select \* from book right join author on book.b\_is=author.b\_is;

+------+-------+--------+------+------------+------+----------+----------+

| b\_is | title | p\_name | pri | date\_pb | b\_is | ath\_name | ath\_city |

+------+-------+--------+------+------------+------+----------+----------+

| 1 | abc | ram | 90 | 2013-03-12 | 1 | rohan

| pune |

| 1 | abc | xyz | 90 | 2024-11-04 | 1 | rohan

| pune |

| 2 | pqr | pranav | 70 | 2024-12-23 | 2 | sahil | phaltan |

+------+-------+--------+------+------------+------+----------+----------+

3 rows in set (0.00 sec)

mysql> create index idx on author(b\_is,ath\_name,ath\_city);

Query OK, 0 rows affected (0.05 sec)

Records: 0 Duplicates: 0 Warnings: 0

mysql> show index from author;

+--------+------------+----------+--------------+-------------+-----------+-------------+----------+--------+------+------------+---------+---------------+---------+------------+

| Table | Non\_unique | Key\_name | Seq\_in\_index | Column\_name | Collation | Cardinality | Sub\_part | Packed | Null | Index\_type | Comment | Index\_comment | Visible | Expression |

+--------+------------+----------+--------------+-------------+-----------+-------------+----------+--------+------+------------+---------+---------------+---------+------------+

| author | 1 | idx | 1 | b\_is | A | 2 | NULL | NULL | YES | BTREE |

| | YES | NULL |

| author | 1 | idx | 2 | ath\_name | A | 2 | NULL | NULL | YES | BTREE |

| | YES | NULL |

| author | 1 | idx | 3 | ath\_city | A | 2 | NULL | NULL | YES | BTREE |

| | YES | NULL |

+--------+------------+----------+--------------+-------------+-----------+-------------+----------+--------+------+------------+---------+---------------+---------+------------+

3 rows in set (0.02 sec)