Q)Create a query where PostgreSQL chooses a merge join (hint: use an order by clause)

Solution:
Here's an example query that will use a merge join:

```
    SELECT *
    FROM student
    JOIN takes ON student.ID = takes.ID
    ORDER BY student.ID;
```

This query joins the student and takes tables and sorts the results by student.ID.
By ordering the results this way, PostgreSQL is more likely to use a merge join to efficiently merge the sorted results from each table.

```
explain SELECT *
    FROM student
    JOIN takes ON student.ID = takes.ID
    ORDER BY student.ID;
                                        QUERY PLAN
-------------------------------------------------------------------------------
---------------
 Merge Join  (cost=0.56..2568.55 rows=30000 width=48)
   Merge Cond: ((student.id)::text = (takes.id)::text)
   ->  Index Scan using student_pkey on student  (cost=0.28..130.27
rows=2000 width=24)
   ->  Index Scan using takes_pkey on takes  (cost=0.29..2058.28
rows=30000 width=24)
(4 rows)
```

```
explain analyze SELECT *
    FROM student
    JOIN takes ON student.ID = takes.ID
    ORDER BY student.ID;
                                                              QUERY PLAN
-------------------------------------------------------------------------------
-------------------------------------------------------------
 Merge Join  (cost=0.56..2568.55 rows=30000 width=48) (actual
time=0.061..34.556 rows=30000 loops=1)
   Merge Cond: ((student.id)::text = (takes.id)::text)
   ->  Index Scan using student_pkey on student  (cost=0.28..130.27
rows=2000 width=24) (actual time=0.016..1.398 rows=2000 loops=1)
   ->  Index Scan using takes_pkey on takes  (cost=0.29..2058.28
rows=30000 width=24) (actual time=0.032..21.017 rows=30000 loops=1)
 Planning Time: 0.689 ms
 Execution Time: 36.418 ms
(6 rows)
```