Students Table

```
create table personal.students
(student_id varchar(5) not null,
 student_name varchar(15),
 age int,
 class_id varchar(5),
 PRIMARY KEY(student_id)
 );
```

```
select * from personal.students;
```

Result Grid | Filter Rows: | Edit:

student_id	student_name	age	class_id
1	Alice	18	101
2	Bob	17	102
3	Carol	18	101
4	David	17	103
NULL	NULL	NULL	NULL

Classes table

```
create table personal.classes
(class_id varchar(5) not null,
 class_name varchar(10),
 PRIMARY KEY(class_id)
 );
```

```
ALTER TABLE personal.students
ADD FOREIGN KEY (class_id) REFERENCES personal.classes(class_id);
```

```
select * from personal.classes;
```

Result Grid | Filter Rows: | Edit:

class_id	class_name
101	Math
102	Science
103	History
NULL	NULL

Score table

```
create table personal.score
( id int not null,
  student_id varchar(5),
 subject varchar(10),
 score int,
 PRIMARY KEY(id)
 );
```

```
select * from personal.score;
```

Result Grid | Filter Rows: | Edit:

id	student_id	subject	score
1	1	Math	90
2	1	Science	85
3	2	Math	78
4	2	Science	92
5	3	Math	88
6	3	Science	79
7	4	History	95
NULL	NULL	NULL	NULL

Queries :

1. Question: For each class, find the student(s) who scored the highest in Science.

select s.student_name ,sc.subject, sc.score from personal.students s

join personal.score sc on s.student_id = sc.student_id

where sc.score = (select max(sc1.score)

from personal.score sc1 where sc1.subject = "Science" group by sc1.subject);

```
select s.student_name ,sc.subject, sc.score from personal.students s
join personal.score sc on s.student_id = sc.student_id
where sc.score = (select max(sc1.score)
from personal.score sc1 where sc1.subject = "Science" group by sc1.subject);
```

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

student_name	subject	score
Bob	Science	92

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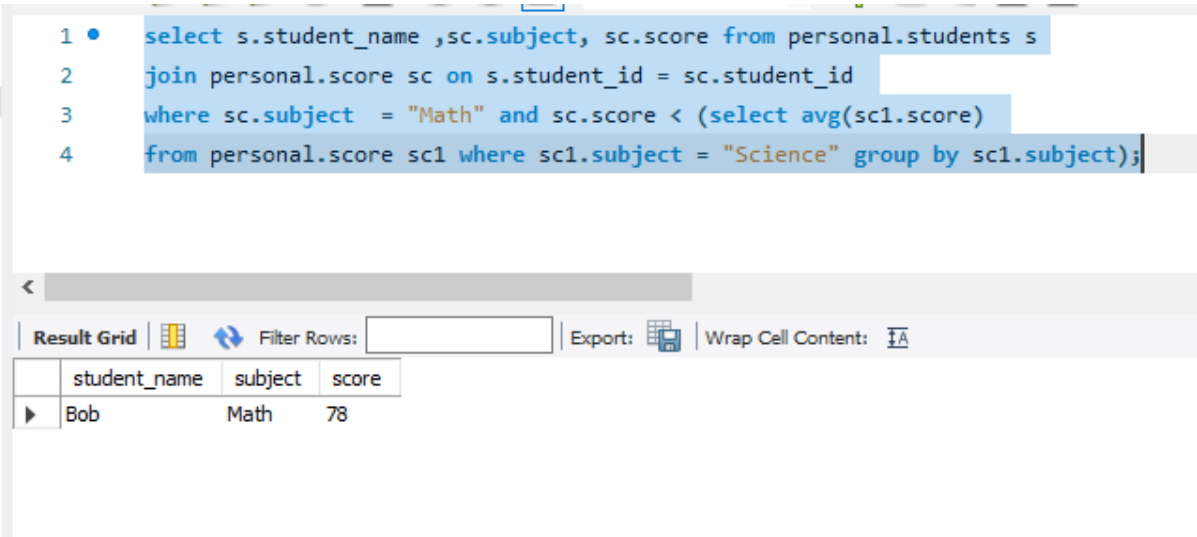
2. Question: List the names of students who scored lower in Math than their average Science score.

select s.student_name ,sc.subject, sc.score from personal.students s

join personal.score sc on s.student_id = sc.student_id

where sc.subject = "Math" and sc.score < (select avg(sc1.score)

from personal.score sc1 where sc1.subject = "Science" group by sc1.subject);



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3. Question: Display the class names with the highest number of students who scored above 80 in any subject.

Query1 : create table personal.temp_score select sc.subject,count(*) as no_of_students_above_80

from personal.score sc where sc.score > 80 group by sc.subject ;

query2 : select subject from personal.temp_score where no_of_students_above_80 =

(select max(no_of_students_above_80) from personal.temp_score tsc);

Query 3: drop table personal.temp_score;

```
create table personal.temp_score select sc.subject,count(*) as no_of_students_above_80
from personal.score sc where sc.score > 80 group by sc.subject ;

select subject from personal.temp_score where no_of_students_above_80 =
(select max(no_of_students_above_80) from personal.temp_score tsc);

drop table personal.temp_score;
```

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

subject
Math
Science

---

4. Question: Find the students who scored the highest in each subject.

```
SELECT m.subject,s.student_name,m.score
  from personal.students s
    inner join personal.score m on s.student_id=m.student_id
    inner join personal.classes su on m.subject=su.class_name
    inner join (select subject
                ,max(score) as maximum
                  from personal.score ma group by subject
            ) highmarks
              ON highmarks.subject=m.subject
                AND highmarks.maximum=m.score
      order by subject,student_name;
```

```sql
SELECT m.subject,s.student_name,m.score
    from personal.students s
        inner join personal.score m on s.student_id=m.student_id
        inner join personal.classes su on m.subject=su.class_name
        inner join (select subject
                        ,max(score) as maximum
                            from personal.score ma group by subject
                    ) highmarks
                        ON highmarks.subject=m.subject
                            AND highmarks.maximum=m.score
            order by subject,student_name;
```

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

subject	student_name	score
History	David	95
Math	Alice	90
Science	Bob	92

---

5. Question: List the names of students who scored higher than the average of any student's score in their own class.

select distinct s.student_name,sc.score,sc.subject from personal.students s

inner join personal.score sc on s.student_id = sc.student_id

inner join (select subject,avg(score) a from personal.score group by subject) avgScore

where sc.score > avgScore.a and sc.subject = avgScore.subject;

```
select distinct s.student_name,sc.score,sc.subject from personal.students s
inner join personal.score sc on s.student_id = sc.student_id
inner join (select subject,avg(score) a from personal.score group by subject) avgScore
where sc.score > avgScore.a and sc.subject = avgScore.subject;
```

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

student_name	score	subject
Alice	90	Math
Bob	92	Science
Carol	88	Math

---

6. Question: Find the class(es) where the students average age is above the average age of all students.

select distinct c.class_name from personal.students s

inner join personal.classes c on s.class_id = c.class_id

where age > (select avg(age) from personal.students) ;

Limit to 1000 rows

```
select distinct c.class_name from personal.students s
inner join personal.classes c on s.class_id = c.class_id
where age > (select avg(age) from personal.students ) ;
```

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

class_name
Math

---

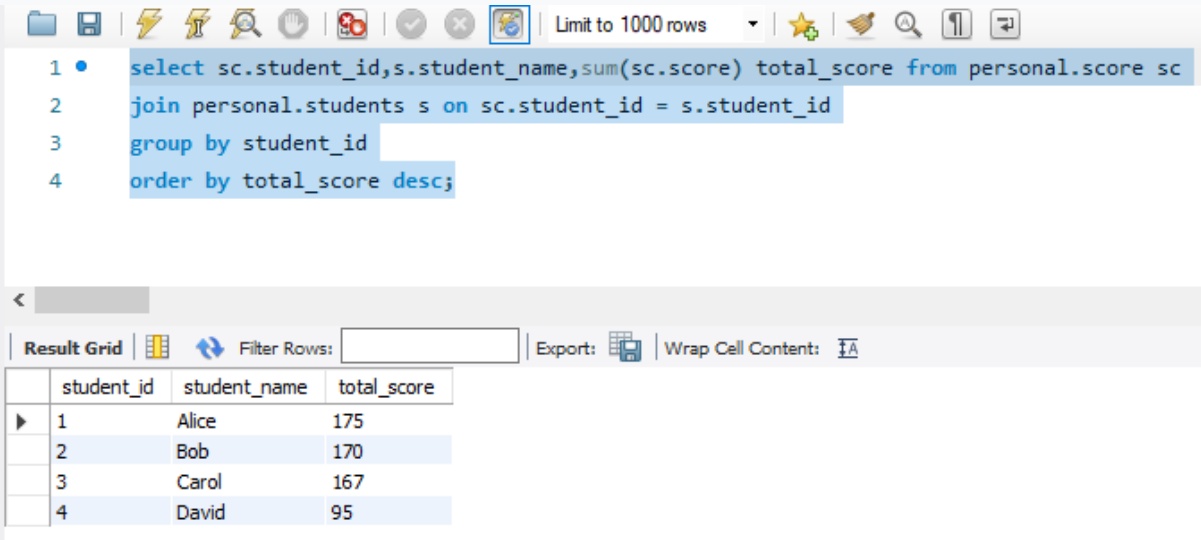
7. Question: Display the student names and their total scores, ordered by the total score in descending order.

```
select sc.student_id,s.student_name,sum(sc.score) total_score from personal.score sc

join personal.students s on sc.student_id = s.student_id

group by student_id

order by total_score desc;
```



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8. Question: Find the student(s) who scored the highest in the class with the lowest average score.

```
select distinct s.student_name , sc.score  from personal.students s

inner join personal.score sc on sc.student_id = s.student_id

inner join (select max(score) mx from personal.score group by subject) maxScore on

inner join (select avg(score) avgs from personal.score group by subject) avgScore

where sc.score = (select max(maxScore.mx) from maxScore) and
```

sc.score = (select min(avgScore.avgs) from avgScore);

---

9. Question: List the names of students who scored the same as Alice in at least one subject.

select s.student_name,sc.score from personal.score sc

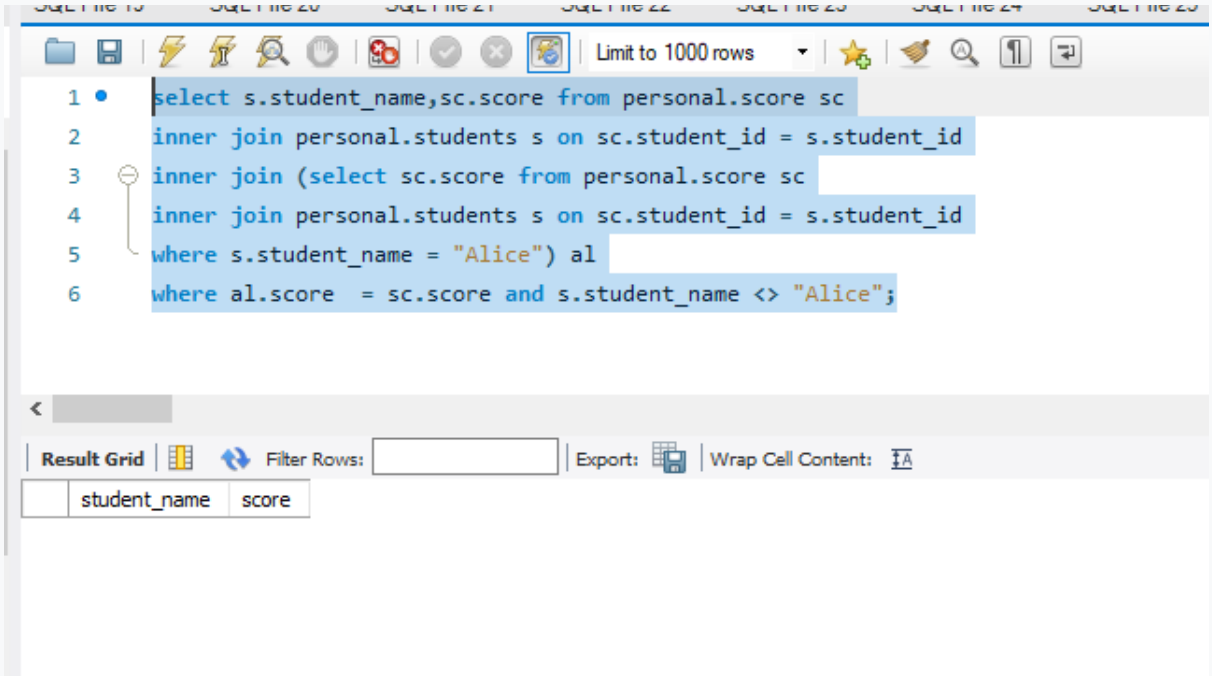
inner join personal.students s on sc.student_id = s.student_id

inner join (select sc.score from personal.score sc

inner join personal.students s on sc.student_id = s.student_id

where s.student_name = "Alice") al

where al.score = sc.score and s.student_name <> "Alice";



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10. Question: Display the class names along with the number of students who scored below the average score in their class.

select distinct c.class_name , s.student_name from personal.students s

inner join personal.classes c on s.class_id = c.class_id

where age < (select avg(score) from personal.score) ;