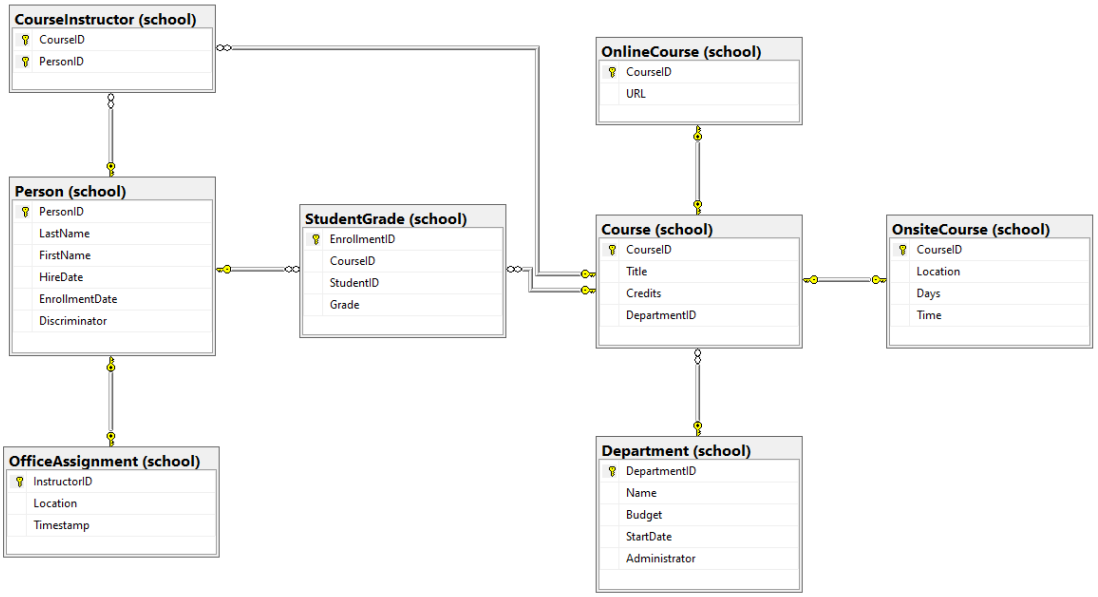
Esercizio SQL

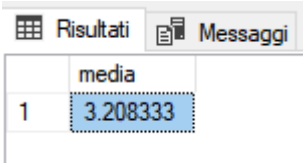
Prendere in considerazione il database School rappresentato dal seguente diagramma




e scrivere le istruzioni SQL necessarie per estrarre le seguenti informazioni:

1. il voto medio complessivo di tutti gli esami

```
create view media_voti
as
Select avg(Grade) as media
from StudentGrade
```




2. gli studenti che hanno una media dei loro esami inferiore alla media complessiva degli esami

```
select * from Person
inner join StudentGrade
on Person.PersonID = StudentGrade.StudentID
where Discriminator = 'Student' and StudentGrade.Grade < (Select media
from media_voti )
```

Risultati | Messaggi

| | PersonID | LastName | FirstName | HireDate | EnrollmentDate | Discriminator | EnrollmentID | CourseID | StudentID | Grade |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 3 | Justice | Peggy | NULL | 2001-09-01 00:00:00.000 | Student | 3 | 2021 | 3 | 3.00 |
| 2 | 6 | Li | Yan | NULL | 2002-09-01 00:00:00.000 | Student | 5 | 2021 | 6 | 2.50 |
| 3 | 8 | Olivotto | Nino | NULL | 2005-09-01 00:00:00.000 | Student | 9 | 2021 | 8 | 3.00 |
| 4 | 8 | Olivotto | Nino | NULL | 2005-09-01 00:00:00.000 | Student | 10 | 2042 | 8 | 3.00 |
| 5 | 11 | Lopez | Sophia | NULL | 2004-09-01 00:00:00.000 | Student | 13 | 4041 | 11 | 2.50 |
| 6 | 14 | Walker | Alexandra | NULL | 2000-09-01 00:00:00.000 | Student | 16 | 4022 | 14 | 3.00 |
| 7 | 14 | Walker | Alexandra | NULL | 2000-09-01 00:00:00.000 | Student | 19 | 4041 | 14 | 3.00 |
| 8 | 15 | Powell | Carson | NULL | 2004-09-01 00:00:00.000 | Student | 20 | 4022 | 15 | 2.50 |
| 9 | 16 | Jai | Damien | NULL | 2001-09-01 00:00:00.000 | Student | 21 | 4022 | 16 | 2.00 |
| 10 | 21 | Holt | Roger | NULL | 2004-09-01 00:00:00.000 | Student | 25 | 4061 | 21 | 2.00 |
| 11 | 22 | Alexander | Carson | NULL | 2005-09-01 00:00:00.000 | Student | 26 | 4022 | 22 | 3.00 |
| 12 | 22 | Alexander | Carson | NULL | 2005-09-01 00:00:00.000 | Student | 28 | 4061 | 22 | 2.50 |
| 13 | 23 | Morgan | Isaiah | NULL | 2001-09-01 00:00:00.000 | Student | 29 | 4022 | 23 | 3.00 |
| 14 | 23 | Morgan | Isaiah | NULL | 2001-09-01 00:00:00.000 | Student | 30 | 1045 | 23 | 1.50 |
| 15 | 26 | Rogers | Cody | NULL | 2002-09-01 00:00:00.000 | Student | 34 | 1061 | 26 | 3.00 |
| 16 | 28 | White | Anthony | NULL | 2001-09-01 00:00:00.000 | Student | 36 | 1045 | 28 | 2.50 |
| 17 | 3 | Justice | Peggy | NULL | 2001-09-01 00:00:00.000 | Student | 43 | 2021 | 3 | 3.00 |
| 18 | 6 | Li | Yan | NULL | 2002-09-01 00:00:00.000 | Student | 45 | 2021 | 6 | 2.50 |
| 19 | 8 | Olivotto | Nino | NULL | 2005-09-01 00:00:00.000 | Student | 49 | 2021 | 8 | 3.00 |
| 20 | 8 | Olivotto | Nino | NULL | 2005-09-01 00:00:00.000 | Student | 50 | 2042 | 8 | 3.00 |

3. lo studente con  la media più alta

4. il corso che ha fatto più esami

```
create view courses_Grade
as
select Title,Course.CourseID, count(*) as totale
from Course
inner join StudentGrade on
StudentGrade.CourseID = Course.CourseID
group by Course.Title,Course.CourseID
```

Risultati | Messaggi

| | Title | CourseID | totale |
|---|---|---|---|
| 1 | Calculus | 1045 | 6 |
| 2 | Chemistry | 1050 | 9 |
| 3 | Physics | 1061 | 18 |
| 4 | Composition | 2021 | 15 |
| 5 | Poetry | 2030 | 6 |
| 6 | Literature | 2042 | 9 |
| 7 | Microeconomics | 4022 | 24 |
| 8 | Macroeconomics | 4041 | 18 |
| 9 | Quantitative | 4061 | 15 |

```
select * from courses_Grade
where totale =
(select max(totale)from courses_Grade)
```

Risultati | Messaggi

| | Title | CourseID | totale |
|---|---|---|---|
| 1 | Microeconomics | 4022 | 24 |

5. i docenti del corso che ha fatto più esami

```
select * from Person
inner join CourseInstructor
on Person.PersonID = CourseInstructor.PersonID
where Discriminator = 'Instructor' and CourseInstructor.CourseID in
(select CourseID from courses_Grade where totale =
(select max(totale)from courses_Grade))
```

Risultati | Messaggi

| | PersonID | LastName | FirstName | HireDate | EnrollmentDate | Discriminator | CourseID | PersonID |
|---|---|---|---|---|---|---|---|---|
| 1 | 18 | Zheng | Roger | 2004-02-12 00:00:00.000 | NULL | Instructor | 4022 | 18 |

6. i corsi che iniziano con la A

```
select title from Course
where title like 'A%'
```

7. i corsi che si tengono il lunedì
   1°metodo:

```
select * from Course
inner join OnsiteCourse
on Course.CourseID = OnsiteCourse.CourseID
where DATENAME(dw,DATEPART(YEAR,OnsiteCourse.Time)) = 'Monday'
```

```
select * from Course
inner join OnsiteCourse
on Course.CourseID = OnsiteCourse.CourseID
where OnsiteCourse.Days like '%M%'
```

Risultati | Messaggi

| | CourseID | Title | Credits | DepartmentID | CourseID | Location | Days | Time |
|---|---|---|---|---|---|---|---|---|
| 1 | 1045 | Calculus | 4 | 7 | 1045 | 121 Smith | MWHF | 1900-01-01 15:30:00 |
| 2 | 1050 | Chemistry | 4 | 1 | 1050 | 123 Smith | MTWH | 1900-01-01 11:30:00 |
| 3 | 2042 | Literature | 4 | 2 | 2042 | 225 Adams | MTWH | 1900-01-01 11:00:00 |
| 4 | 4022 | Microeconomics | 3 | 4 | 4022 | 23 Williams | MWF | 1900-01-01 09:00:00 |

8. per ogni mese dell'anno, il numero di studenti che si sono iscritti in quel mese

```
Select MONTH(EnrollmentDate) as Mese,count(*) as NumeroStud
from Person
Group by MONTH(EnrollmentDate)
```

Risultati | Messaggi

| | Year | Month | totale |
|---|---|---|---|
| 1 | 2000 | 9 | 2 |
| 2 | 2001 | 9 | 5 |
| 3 | 2002 | 9 | 3 |
| 4 | 2003 | 1 | 1 |
| 5 | 2003 | 9 | 3 |
| 6 | 2004 | 9 | 5 |
| 7 | 2005 | 9 | 6 |

9. gli studenti che si sono iscritti di luned

```
select * from Person
where DATENAME(dw,DATEPART(YEAR,Person.EnrollmentDate)) = 'Monday'
```

Risultati | Messaggi

| | PersonID | LastName | FirstName | HireDate | EnrollmentDate | Discriminator |
|---|---|---|---|---|---|---|
| 1 | 6 | Li | Yan | NULL | 2002-09-01 00:00:00.000 | Student |
| 2 | 10 | Alonso | Meredith | NULL | 2002-09-01 00:00:00.000 | Student |
| 3 | 26 | Rogers | Cody | NULL | 2002-09-01 00:00:00.000 | Student |