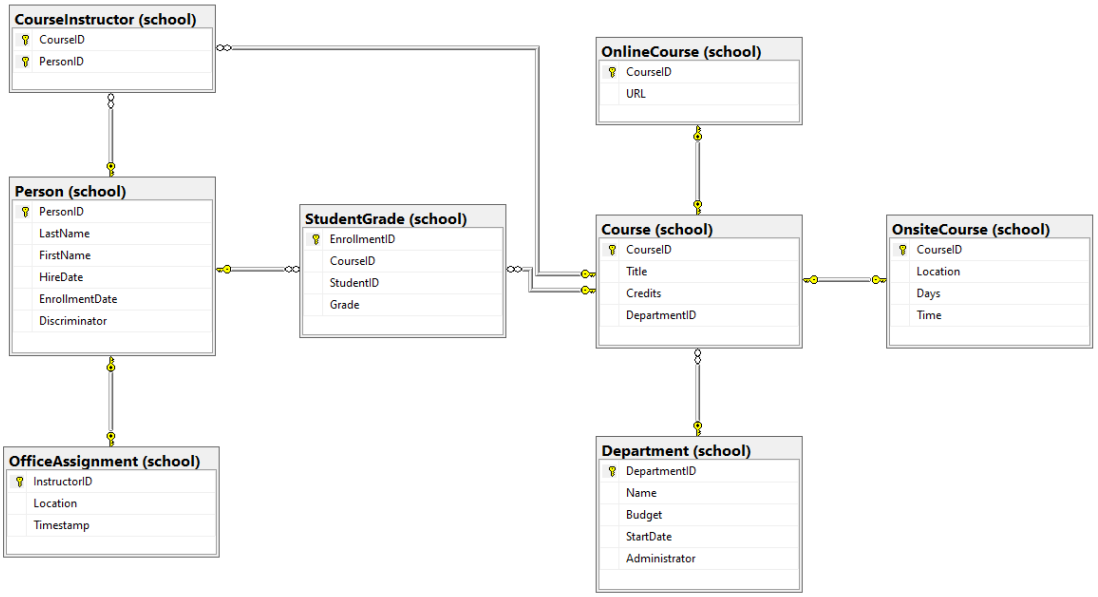
Esercizio SQL

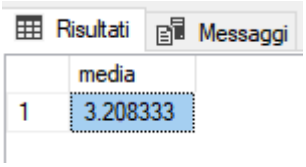
Prendere in considerazione il database School rappresentato dal seguente diagramma



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

```
select studentId, avg(grade) as media
from school.StudentGrade
group by studentId
having avg(grade) = (select max(media)
from (select studentId, avg(grade) as media
from school.StudentGrade
group by studentId) as maxavg)
```

4. il corso che ha fatto più esami

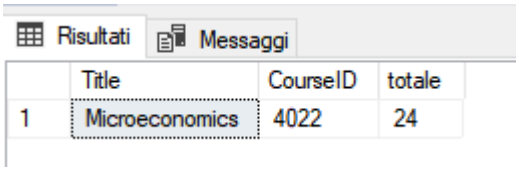
```
create view courses_Grade
as
select Title,Course.CourseID, count(*) as totale
from Course
inner join StudentGrade on
StudentGrade.CourseID = Course.CourseID
group by Course.Title,Course.CourseID
```

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)
```

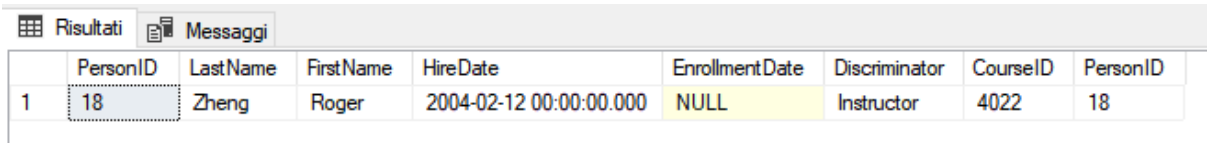


Risultati | Messaggi

	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

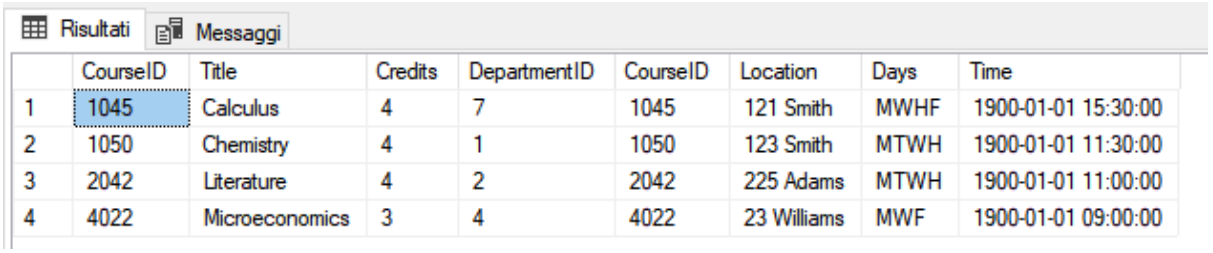
6. i corsi che iniziano con la A

```
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%'
```



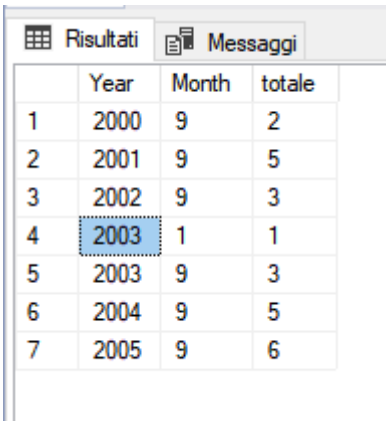
Risultati | Messaggi

	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)
```

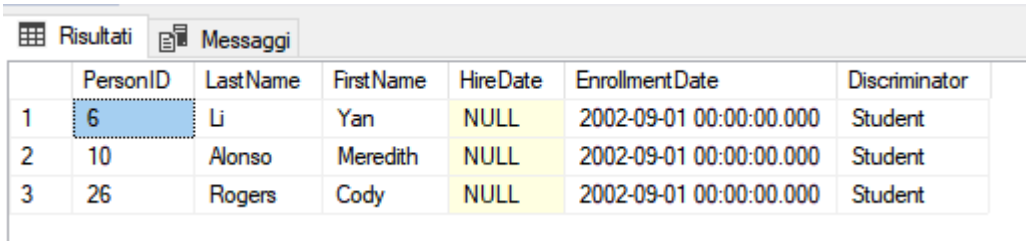


Risultati | Messaggi

	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