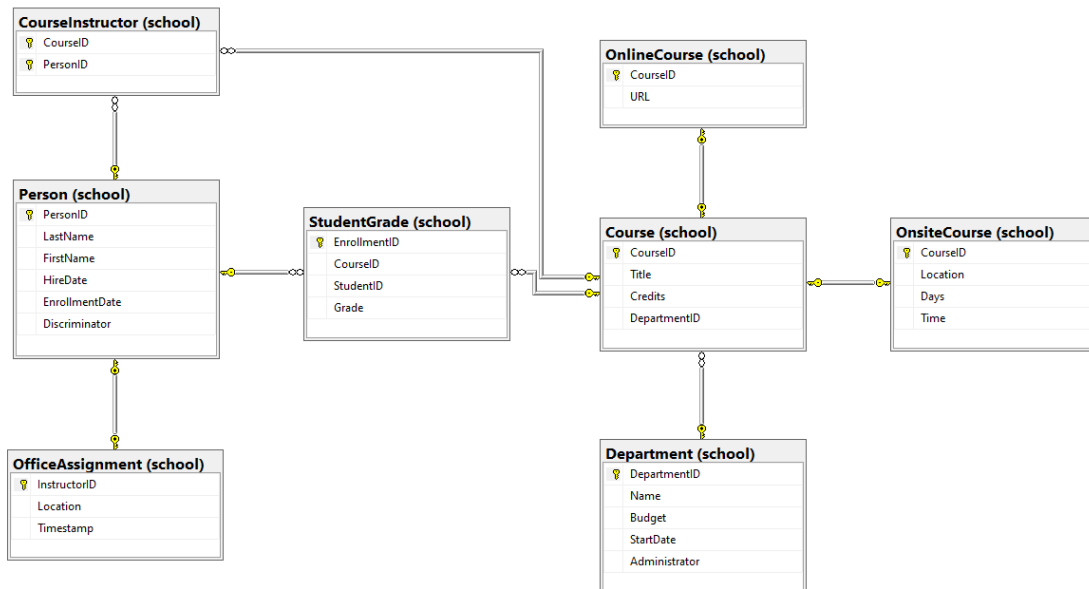Esercizio SQL

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
   ```
   select avg(grade) as voto_medio from school.StudentGrade
   ```


2. gli studenti che hanno una media dei loro esami inferiore alla media complessiva degli esami
   ```
   select LastName, FirstName, avg(grade) as media_esami from school.StudentGrade
   inner join school.Person on person.PersonID = StudentGrade.StudentID
   group by StudentID,LastName, FirstName
   having avg(grade) < (select avg(grade) from school.StudentGrade)
   ```

	LastName	FirstName	media_esami
1	Li	Yan	3.000000
2	Olivotto	Nino	3.000000
3	Lopez	Sophia	2.500000
4	Walker	Alexandra	3.000000
5	Powell	Carson	2.500000
6	Jai	Damien	2.000000
7	Holt	Roger	2.000000
8	Alexander	Carson	3.000000
9	Morgan	Isaiah	2.250000
10	Kapoor	Candace	3.000000
11	Serrano	Stacy	3.000000
12	White	Anthony	3.000000

3. lo studente con la media più alta

```
select LastName, FirstName, avg(grade) as media_esami from
school.StudentGrade
inner join school.Person on person.PersonID =
StudentGrade.StudentID
group by StudentID,LastName, FirstName
having avg(grade) = (select max(grade) from
school.StudentGrade)
```

	LastName	FirstName	media_esami
1	Anand	Arturo	4.000000
2	Suarez	Robyn	4.000000
3	Martin	Randall	4.000000
4	Griffin	Rachel	4.000000

4. il corso che ha fatto più esami

```
create view school.courses_exams
as
select title, count(grade) as n_esami from
school.StudentGrade
inner join school.course on course.CourseID =
StudentGrade.CourseID
group by course.CourseID, title

select * from school.courses_exams
where n_esami =(select max(n_esami) from
school.courses_exams)
```
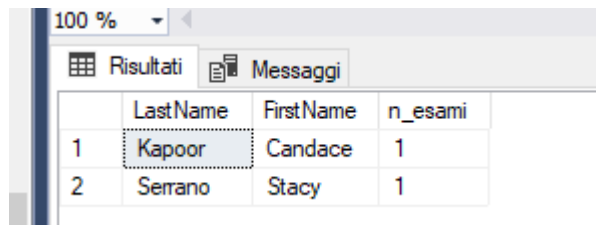
	title	n_esami
1	Microeconomics	7

5. i docenti del corso che ha fatto più esami

```
create view school.instructors_exam
as
select  LastName, FirstName, count(grade) as n_esami from
school.CourseInstructor
inner join school.Person on Person.PersonID =
CourseInstructor.PersonID
inner join school.StudentGrade on StudentGrade.StudentID =
Person.PersonID
group by person.PersonID, LastName, FirstName


select * from school.instructors_exam
where n_esami =
(select max(n_esami) from school.instructors_exam)
)
```
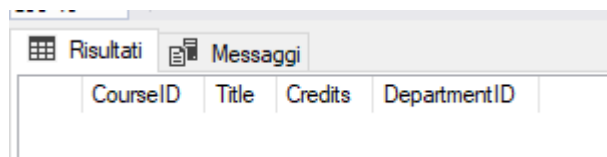
	LastName	FirstName	n_esami
1	Kapoor	Candace	1
2	Serrano	Stacy	1

6. i corsi che iniziano con la A
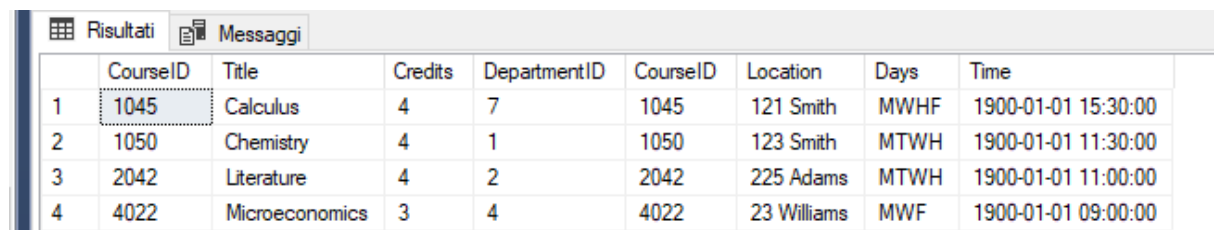
```
select * from school.Course
where title like 'a%'
```

	CourseID	Title	Credits	DepartmentID

7. i corsi che si tengono il lunedì

```
select * from school.Course
inner join school.OnsiteCourse on OnsiteCourse.CourseID =
course.CourseID
where days like 'm%'
```

	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

```
select course.CourseID, title, days, datename(WEEKDAY, Time)
as inizio_corso  from school.Course
```

```
inner join school.OnsiteCourse on OnsiteCourse.CourseID =
course.CourseID
```

	CourseID	title	days	inizio_corso
1	1045	Calculus	MWHF	Monday
2	1050	Chemistry	MTWH	Monday
3	1061	Physics	TWHF	Monday
4	2042	Literature	MTWH	Monday
5	4022	Microeconomics	MWF	Monday
6	4061	Quantitative	TH	Monday

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

```
select enrollmentDate, count(*) as n_studenti_iscritti from
school.student_enrollment
GROUP BY DATEADD(MONTH, DATEDIFF(MONTH, 0, EnrollmentDate),
0), EnrollmentDate
```

	enrollmentDate	n_studenti_iscritti
1	2000-09-01 00:00:00.000	2
2	2001-09-01 00:00:00.000	5
3	2002-09-01 00:00:00.000	3
4	2003-01-30 00:00:00.000	1
5	2003-09-01 00:00:00.000	3
6	2004-09-01 00:00:00.000	5
7	2005-09-01 00:00:00.000	6

9. gli studenti che si sono iscritti di lunedì

```
select lastname, FirstName, datename(WEEKDAY, EnrollmentDate)
as giorno_iscrizione from school.student_enrollment
where datename(WEEKDAY, EnrollmentDate) = 'Monday'
```

	lastname	FirstName	giorno_iscrizione
1	Norman	Laura	Monday
2	Anand	Arturo	Monday
3	Shan	Alicia	Monday