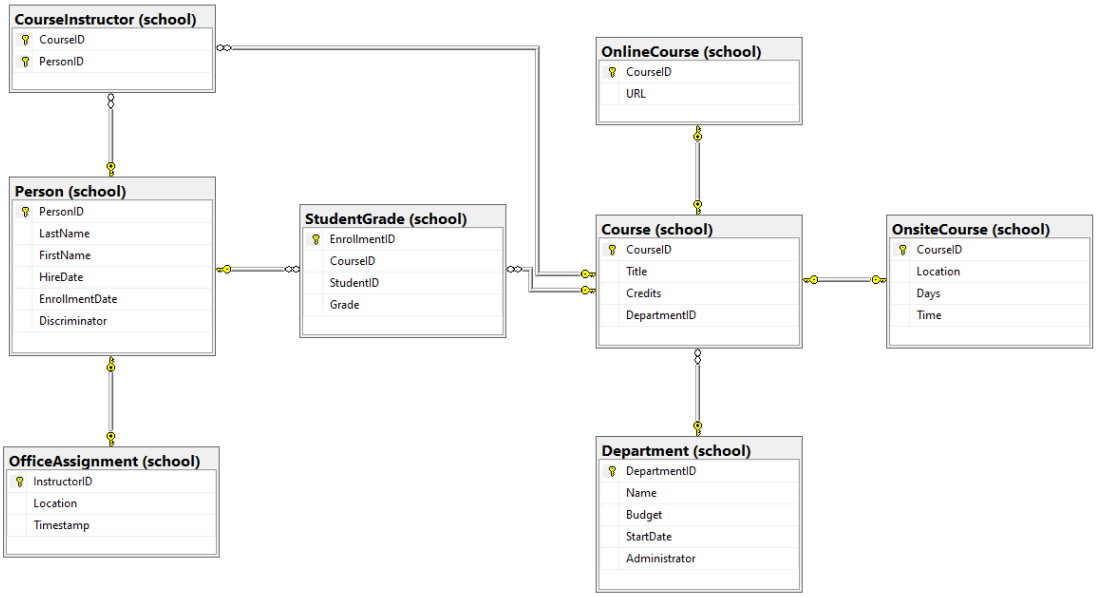
Esercizio SQL

Prendere in considerazione il database School rappresentato dal seguente diagramma



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

1. il budget medio dei dipartimenti

```
select Department.Name, avg(budget) as budget_medio from
school.Department
group by Department.name
```

Risultati | Messaggi

	Name	budget_medio
1	Economics	200000,00
2	Engineering	350000,00
3	English	120000,00
4	Mathematics	250000,00

2. i dipartimenti che hanno un budget superiore alla media

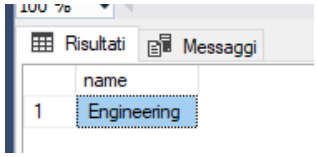
```
select name from school.Department
where budget > (select avg(budget) from school.Department)
```

Risultati | Messaggi

	name
1	Engineering
2	Mathematics

3. il dipartimento con il budget più alto

```
select name from school.SDepartment
where budget = (select max(budget) from school.Department)
```



4. l'elenco dei dipendenti

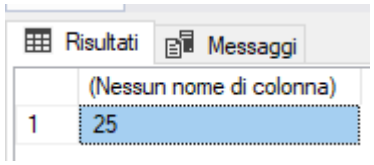
```
select * from school.person
where discriminator = 'Instructor'
```

Risultati | Messaggi

	PersonID	LastName	FirstName	HireDate	EnrollmentDate	Discriminator
1	1	Abercrombie	Kim	1995-03-11 00:00:00.000	NULL	Instructor
2	4	Fakhouri	Fadi	2002-08-06 00:00:00.000	NULL	Instructor
3	5	Harui	Roger	1998-07-01 00:00:00.000	NULL	Instructor
4	18	Zheng	Roger	2004-02-12 00:00:00.000	NULL	Instructor
5	25	Kapoor	Candace	2001-01-15 00:00:00.000	NULL	Instructor
6	27	Serrano	Stacy	1999-06-01 00:00:00.000	NULL	Instructor
7	31	Stewart	Jasmine	1997-10-12 00:00:00.000	NULL	Instructor
8	32	Xu	Kristen	2001-07-23 00:00:00.000	NULL	Instructor
9	34	Van Houten	Roger	2000-12-07 00:00:00.000	NULL	Instructor

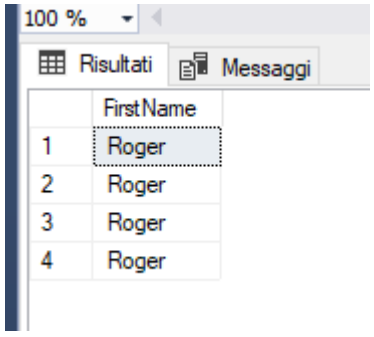
5. il numero di studenti

```
select count(personID) from school.Person
where Discriminator='Student'
```



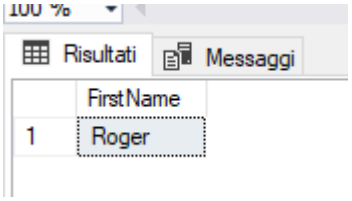
6. le persone che si chiamano Roger

```
select FirstName from school.person
where school.person.FirstName ='Roger'
```



7. gli studenti che si chiamano Roger

```
select FirstName from school.person
where Discriminator = 'Student' and FirstName = 'Roger'
```



8. l'elenco degli studenti in ordine alfabetico

```
select * from school.person
where Discriminator = 'Student'
order by LastName
```

Risultati Messaggi

	PersonID	LastName	FirstName	HireDate	EnrollmentDate	Discriminator
7	17	Carlson	Robyn	NULL	2005-09-01 00:00:00.000	Student
8	33	Gao	Erica	NULL	2003-01-30 00:00:00.000	Student
9	29	Griffin	Rachel	NULL	2004-09-01 00:00:00.000	Student
10	21	Holt	Roger	NULL	2004-09-01 00:00:00.000	Student
11	16	Jai	Damien	NULL	2001-09-01 00:00:00.000	Student
12	3	Justice	Peggy	NULL	2001-09-01 00:00:00.000	Student
13	6	Li	Yan	NULL	2002-09-01 00:00:00.000	Student
14	11	Lopez	Sophia	NULL	2004-09-01 00:00:00.000	Student
15	24	Martin	Randall	NULL	2005-09-01 00:00:00.000	Student
16	23	Morgan	Isaiah	NULL	2001-09-01 00:00:00.000	Student
17	7	Norman	Laura	NULL	2003-09-01 00:00:00.000	Student
18	8	Olivotto	Nino	NULL	2005-09-01 00:00:00.000	Student
19	15	Powell	Carson	NULL	2004-09-01 00:00:00.000	Student
20	26	Rogers	Cody	NULL	2002-09-01 00:00:00.000	Student
21	30	Shan	Alicia	NULL	2003-09-01 00:00:00.000	Student
22	20	Suarez	Robyn	NULL	2004-09-01 00:00:00.000	Student
23	9	Tang	Wayne	NULL	2005-09-01 00:00:00.000	Student
24	14	Walker	Alexandra	NULL	2000-09-01 00:00:00.000	Student
25	28	White	Anthony	NULL	2001-09-01 00:00:00.000	Student

9. gli studenti che si sono iscritti nel 2000

```
select * from school.person
where Discriminator='student' and EnrollmentDate >=
'2000-01-01 00:00:00.000'
```

Risultati | Messaggi

	PersonID	LastName	FirstName	HireDate	EnrollmentDate	Discriminator
1	2	Barzdukas	Gytis	NULL	2005-09-01 00:00:00.000	Student
2	3	Justice	Peggy	NULL	2001-09-01 00:00:00.000	Student
3	6	Li	Yan	NULL	2002-09-01 00:00:00.000	Student
4	7	Norman	Laura	NULL	2003-09-01 00:00:00.000	Student
5	8	Olivotto	Nino	NULL	2005-09-01 00:00:00.000	Student
6	9	Tang	Wayne	NULL	2005-09-01 00:00:00.000	Student
7	10	Alonso	Meredith	NULL	2002-09-01 00:00:00.000	Student
8	11	Lopez	Sophia	NULL	2004-09-01 00:00:00.000	Student
9	12	Browning	Meredith	NULL	2000-09-01 00:00:00.000	Student
10	13	Anand	Arturo	NULL	2003-09-01 00:00:00.000	Student
11	14	Walker	Alexandra	NULL	2000-09-01 00:00:00.000	Student
12	15	Powell	Carson	NULL	2004-09-01 00:00:00.000	Student
13	16	Jai	Damien	NULL	2001-09-01 00:00:00.000	Student
14	17	Carlson	Robyn	NULL	2005-09-01 00:00:00.000	Student
15	19	Bryant	Carson	NULL	2001-09-01 00:00:00.000	Student
16	20	Suarez	Robyn	NULL	2004-09-01 00:00:00.000	Student
17	21	Holt	Roger	NULL	2004-09-01 00:00:00.000	Student
18	22	Alexander	Carson	NULL	2005-09-01 00:00:00.000	Student
19	23	Morgan	Isaiah	NULL	2001-09-01 00:00:00.000	Student

10. il dipendente che ha l'anzianità più alta

```
select * from school.person
where Discriminator='Instructor' and HireDate = (select
min(HireDate) from school.person)
```

Risultati | Messaggi

	PersonID	LastName	FirstName	HireDate	EnrollmentDate	Discriminator
1	1	Abercrombie	Kim	1995-03-11 00:00:00.000	NULL	Instructor

11. i nomi dei corsi onsite

```
select Title from school.OnsiteCourse
inner join school.Course on OnsiteCourse.CourseID =
Course.courseID
```

Risultati | Messaggi

	Title
1	Calculus
2	Chemistry
3	Physics
4	Literature
5	Microeconomics
6	Quantitative

12. i nomi dei corsi online

```
select Title from school.OnlineCourse
inner join school.Course on OnlineCourse.CourseID =
Course.courseID
```

Risultati Messaggi

	Title
1	Composition
2	Poetry
3	Trigonometry
4	Macroeconomics

13. il nomi dei corsi e i nomi dei dipartimenti di appartenenza

```
select course.title, Department.Name from school.Course
inner join school.Department on Department.DepartmentID =
Course.DepartmentID
```

Risultati Messaggi

	title	Name
1	Calculus	Mathematics
2	Chemistry	Engineering
3	Physics	Engineering
4	Composition	English
5	Poetry	English
6	Literature	English
7	Trigonometry	Mathematics
8	Microeconomics	Economics
9	Macroeconomics	Economics
10	Quantitative	Economics

14. il numero di corsi per ogni dipartimento

```
select Department.Name, count(*) as n_corsi from
school.Course
inner join school.Department on Department.DepartmentID =
Course.DepartmentID
group by department.DepartmentID, department.Name
```

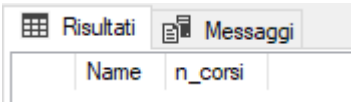
100 %

Risultati Messaggi

	Name	n_corsi
1	Engineering	2
2	English	3
3	Economics	3
4	Mathematics	2

15. i dipartimenti con più di 3 corsi

```
select Department.Name, count(course.CourseID) as n_corsi
from school.Course
inner join school.Department on Department.DepartmentID =
Course.DepartmentID
group by department.DepartmentID, department.Name
having count(course.CourseID) > 3
```



16. il dipartimento con più corsi

```
select Department.Name, count(*)  as n_corsi from
school.Course
inner join school.Department on Department.DepartmentID =
Course.DepartmentID
group by department.DepartmentID, department.Name
having count(*)= (select max(n_corsi) from (select
Department.name, count(*) as n_corsi from school.Course
inner join school.Department
on Department.DepartmentID = Course.DepartmentID
group by department.DepartmentID, Department.Name) as t)
```