ASSIGNMENT 2: SQL

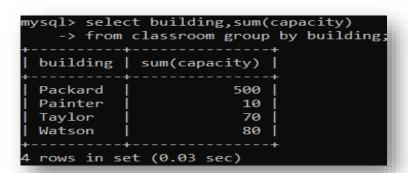
Q1. Find the number of instructors who have never taught any course. If the result of your query is empty, add the appropriate data (and include corresponding insert statements) to ensure the result is not empty.

count(name)

```
mysql> select count(name) from instructor where id not in (select ID from teaches);
+------+
| count(name) |
+------+
| 3 |
+------+
1 row in set (0.12 sec)
```

Q2. Find the total capacity of every building in the university.

building	sum(capacity)
Packard	500
Painter	10
Taylor	70
Watson	80



Q3. Find all departments that have at least one instructor and list the names of the departments along with the number of instructors; order the result in descending order of number of instructors.

dept_name	Total_instructors	
Comp. Sci.	3	
Finance	2	
History	2	
Physics	2	
Biology	1	
Elec. Eng.	1	
Music	1	

```
mysql> select dept_name,count(instructor.ID) as Total_instructors
   -> from department
   -> inner join instructor
   -> using(dept_name)
   -> group by department.dept_name
   -> Having count(instructor.ID) >= 1
   -> order by count(instructor.ID) desc;
 dept_name | Total_instructors |
 Comp. Sci.
                             3
 Finance
 History
 Physics
                             2
 Biology
 Elec. Eng. |
                             1 |
 Music
 rows in set (0.03 sec)
```

Q4. For each student, compute the total credits they have successfully completed, i.e. total credits of courses they have taken, for which they have a non-null grade other than 'F'. Do NOT use the tot_creids attribute of student.

ID	name	sum(credits)
00128	Zhang	7
12345	Shankar	14
19991	Brandt	3
23121	Chavez	3
44553	Peltier	4
45678	Levy	7
54321	Williams	8
55739	Sanchez	3
76543	Brown	7
76653	Aoi	3
98765	Bourikas	7
98988	Tanaka	4

-> from student					
-> left join takes					
-> using(ID)					
-> inner join course					
-> on takes.course id = course.course id					
-> where takes.grade <> 'F'					
-> group by student.ID;					
++					
ID name sum(credits)					
++					
00128 Zhang 7					
12345 Shankar 14					
19991 Brandt 3					
23121 Chavez 3					
44553 Peltier 4					
45678 Levy 7					
54321 Williams 8					
55739 Sanchez 3					
76543 Brown 7					
76653 Aoi 3					
98765 Bourikas 7					
98988 Tanaka 4					
++					
12 rows in set (0.04 sec)					

Section B

Q1. Find the id and title of all courses which do not require any prerequisites.

course_id	title
BIO-101	Intro. to Biology
CS-101	Intro. to Computer Science
FIN-201	Investment Banking
HIS-351	World History
MU-199	Music Video Production
PHY-101	Physical Principles

Q2. Find the names of students who have not taken any biology dept. courses.

```
name
Zhang
Shankar
Levy
Williams
Brown
Bourikas
Aoi
Chavez
Brandt
Sanchez
Peltier
```

```
mysql> select student.name
   -> from student
   -> left join takes
   -> using(ID)
   -> inner join course
   -> on takes.course_id = course.course_id
   -> where course.dept name <> "Biology"
   -> group by student.ID;
 name
 Zhang
 Shankar
 Levy
 Williams
 Brown
 Bourikas
 Aoi
 Chavez
 Brandt
 Sanchez
 Peltier
11 rows in set (0.01 sec)
```