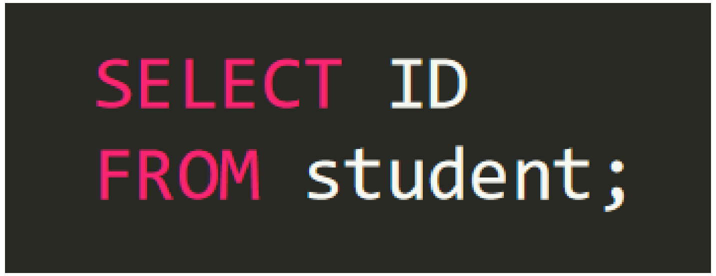
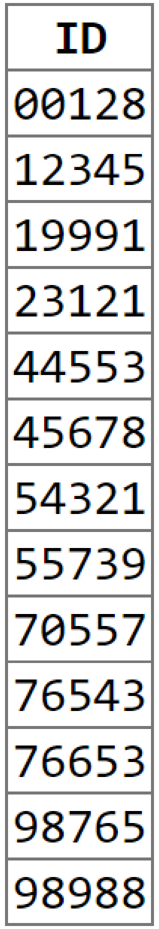
Assignment 3: SQL Codes

EPPS 6354: Information Management

SQL code to get a list of Student IDs

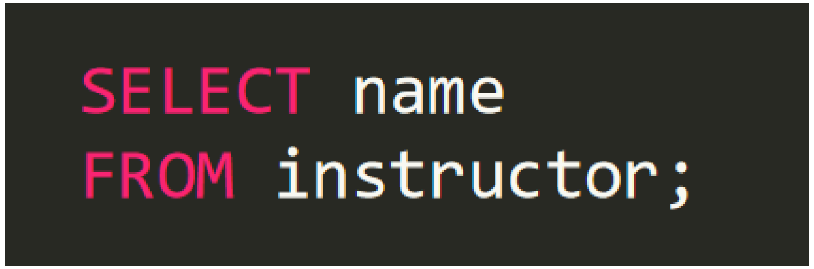


```sql
SELECT ID
FROM student;
```

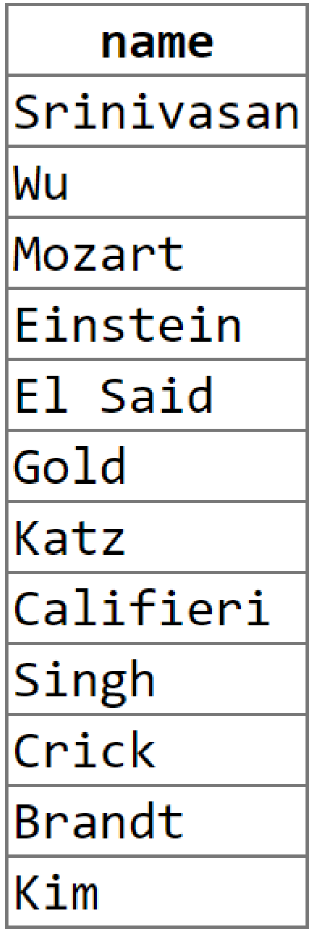


ID
00128
12345
19991
23121
44553
45678
54321
55739
70557
76543
76653
98765
98988

SQL code to get a list of Instructors

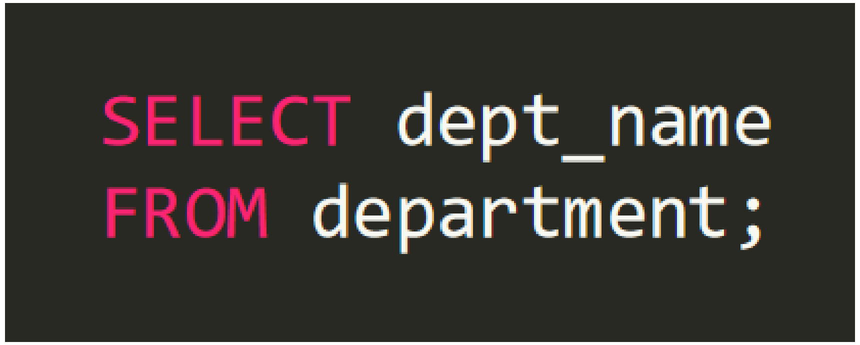


```sql
SELECT name
FROM instructor;
```

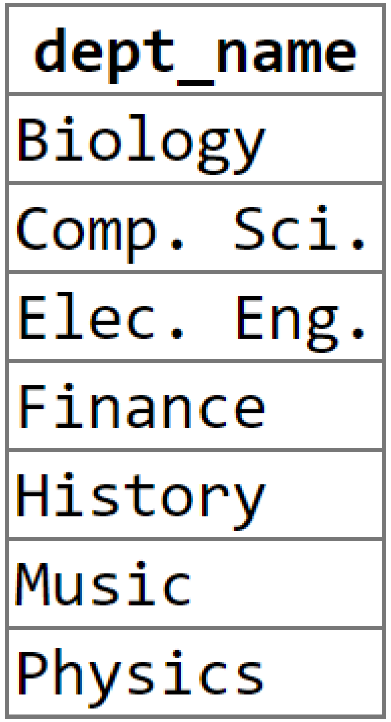


name
Srinivasan
Wu
Mozart
Einstein
El Said
Gold
Katz
Califieri
Singh
Crick
Brandt
Kim

SQL code to get a list of Departments



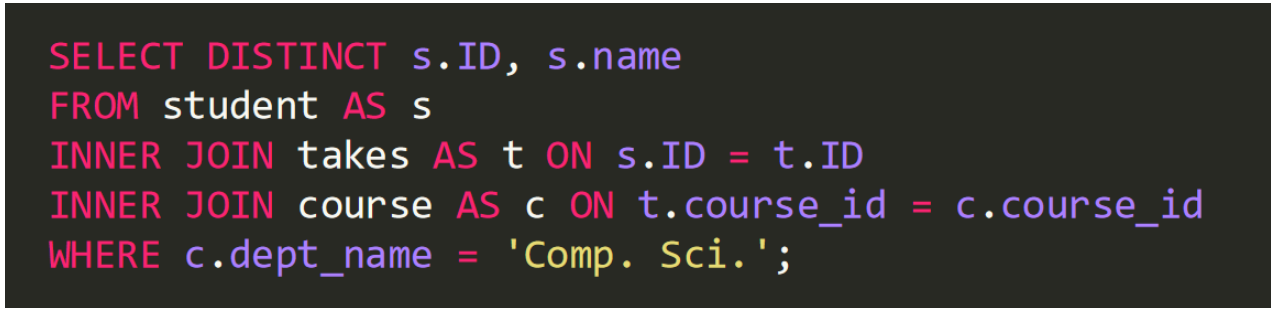
```sql
SELECT dept_name
FROM department;
```



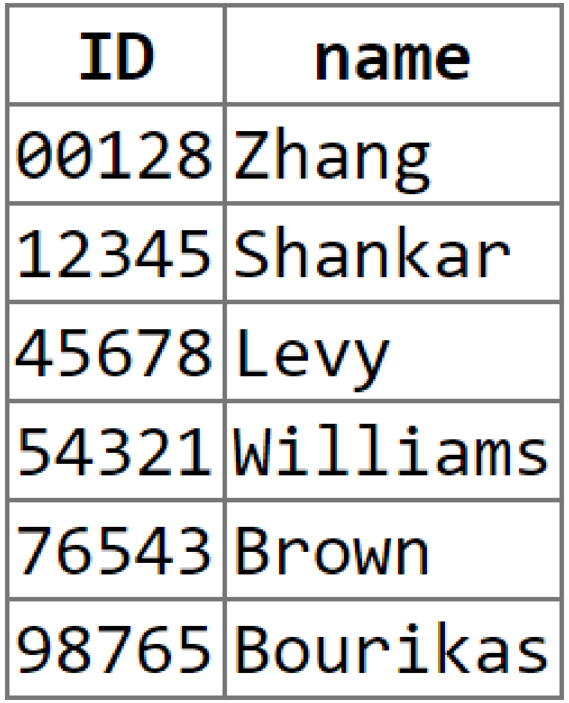
dept_name
Biology
Comp. Sci.
Elec. Eng.
Finance
History
Music
Physics

SQL codes to execute queries

Find ID and name of each student who has taken at least one Comp. Sci. course

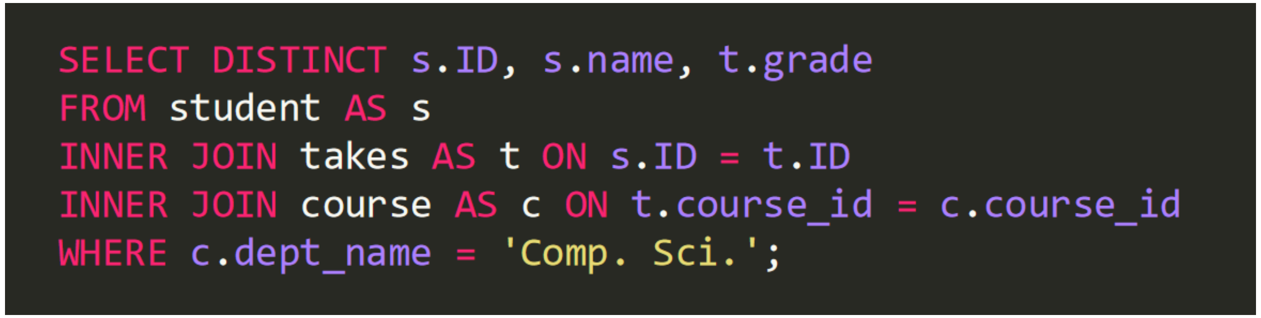


```sql
SELECT DISTINCT s.ID, s.name
FROM student AS s
INNER JOIN takes AS t ON s.ID = t.ID
INNER JOIN course AS c ON t.course_id = c.course_id
WHERE c.dept_name = 'Comp. Sci.';
```

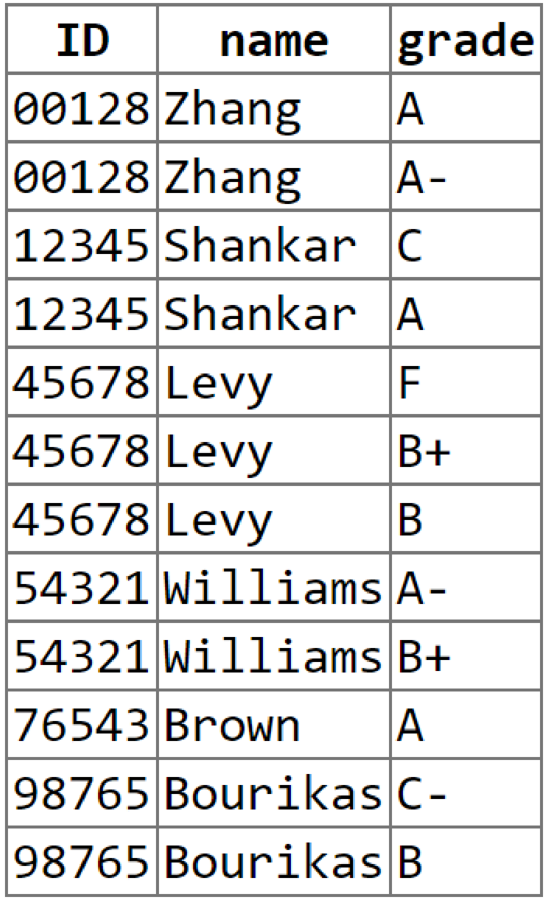


ID	name
00128	Zhang
12345	Shankar
45678	Levy
54321	Williams
76543	Brown
98765	Bourikas

Add grades to the list

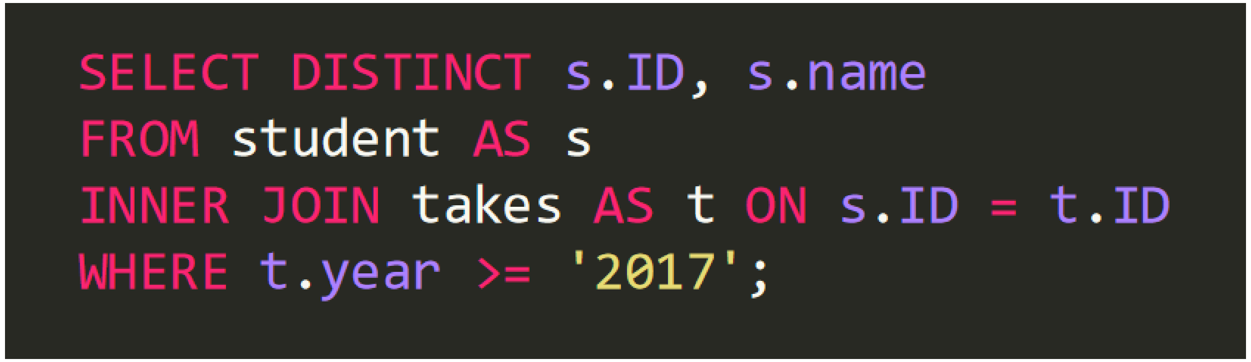


```sql
SELECT DISTINCT s.ID, s.name, t.grade
FROM student AS s
INNER JOIN takes AS t ON s.ID = t.ID
INNER JOIN course AS c ON t.course_id = c.course_id
WHERE c.dept_name = 'Comp. Sci.';
```

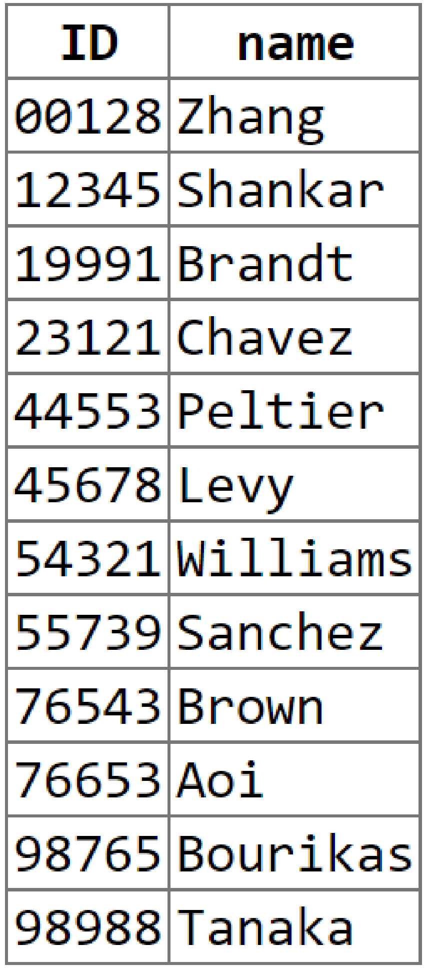


ID	name	grade
00128	Zhang	A
00128	Zhang	A-
12345	Shankar	C
12345	Shankar	A
45678	Levy	F
45678	Levy	B+
45678	Levy	B
54321	Williams	A-
54321	Williams	B+
76543	Brown	A
98765	Bourikas	C-
98765	Bourikas	B

Find ID and name of each student who has not taken any course offered before 2017

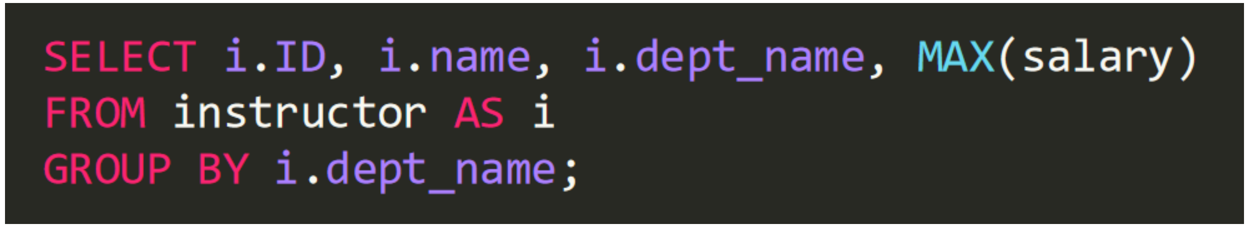


```sql
SELECT DISTINCT s.ID, s.name
FROM student AS s
INNER JOIN takes AS t ON s.ID = t.ID
WHERE t.year >= '2017';
```

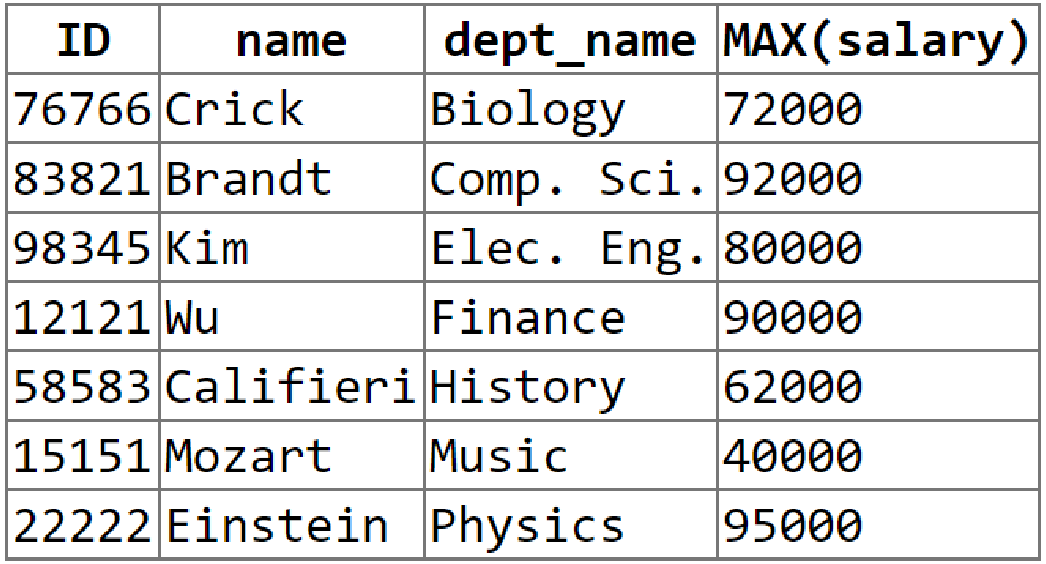


ID	name
00128	Zhang
12345	Shankar
19991	Brandt
23121	Chavez
44553	Peltier
45678	Levy
54321	Williams
55739	Sanchez
76543	Brown
76653	Aoi
98765	Bourikas
98988	Tanaka

For each department, find the maximum salary of instructors in that department

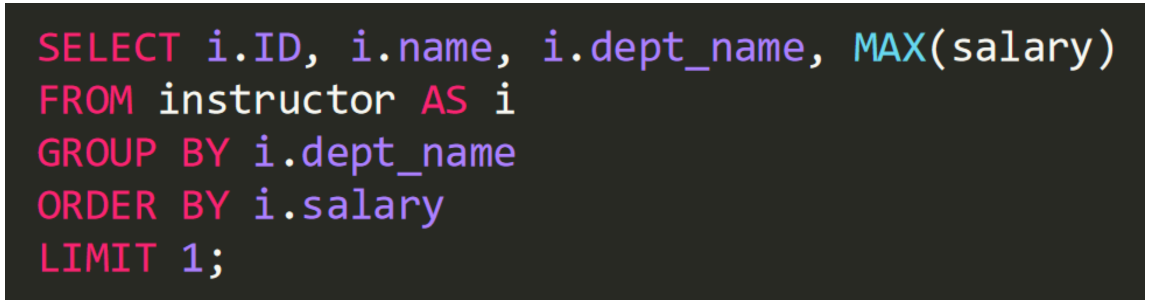


```sql
SELECT i.ID, i.name, i.dept_name, MAX(salary)
FROM instructor AS i
GROUP BY i.dept_name;
```

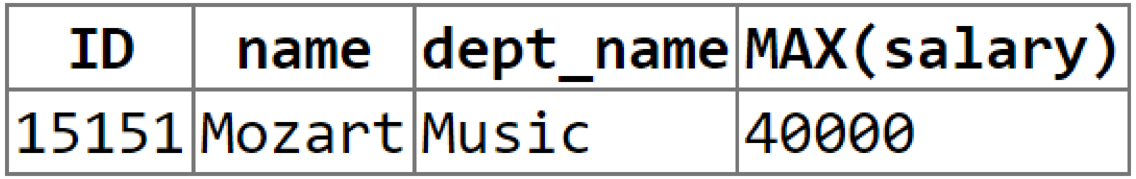


ID	name	dept_name	MAX(salary)
76766	Crick	Biology	72000
83821	Brandt	Comp. Sci.	92000
98345	Kim	Elec. Eng.	80000
12121	Wu	Finance	90000
58583	Califieri	History	62000
15151	Mozart	Music	40000
22222	Einstein	Physics	95000

Find the lowest, across all departments, of the per-department maximum salary computed by the preceding query



```
SELECT i.ID, i.name, i.dept_name, MAX(salary)
FROM instructor AS i
GROUP BY i.dept_name
ORDER BY i.salary
LIMIT 1;
```



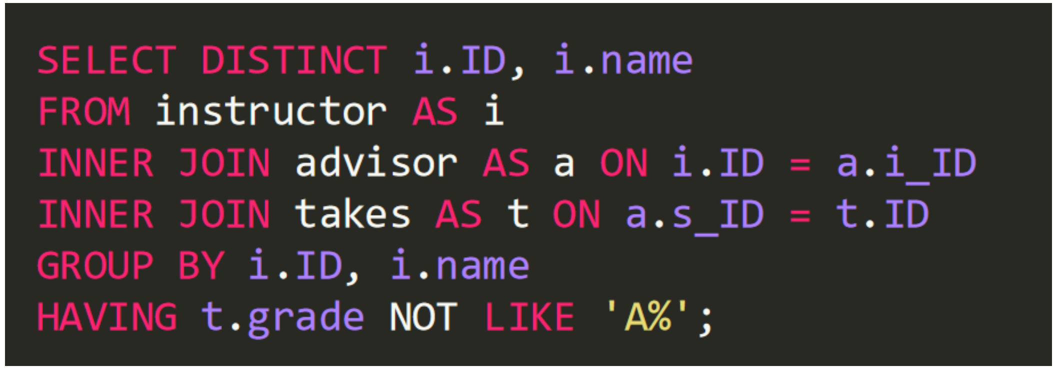
ID	name	dept_name	MAX(salary)
15151	Mozart	Music	40000

Add names to the list

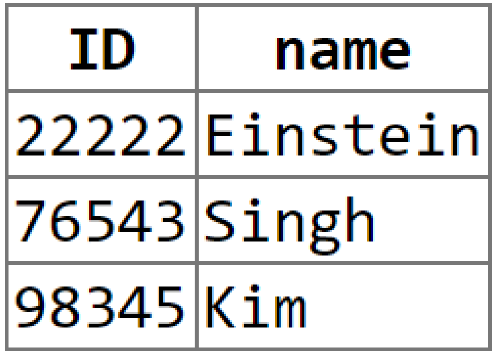
Find instructor (with name and ID) who has never given an A grade in any course she/he has taught

Instructors:

- Califieri
- Einstein
- El Said
- Gold
- Kim
- Singh
- Wu

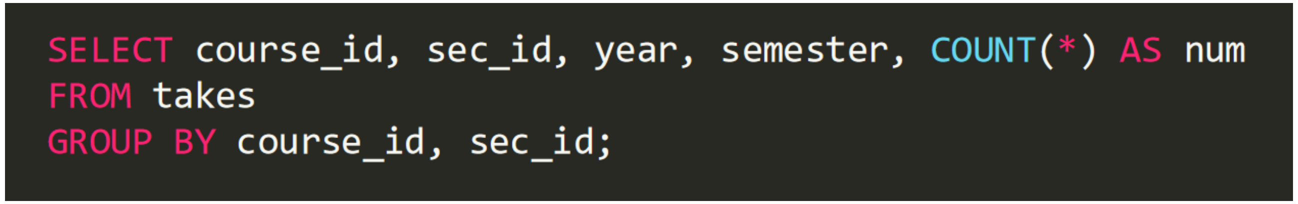


```sql
SELECT DISTINCT i.ID, i.name
FROM instructor AS i
INNER JOIN advisor AS a ON i.ID = a.i_ID
INNER JOIN takes AS t ON a.s_ID = t.ID
GROUP BY i.ID, i.name
HAVING t.grade NOT LIKE 'A%';
```

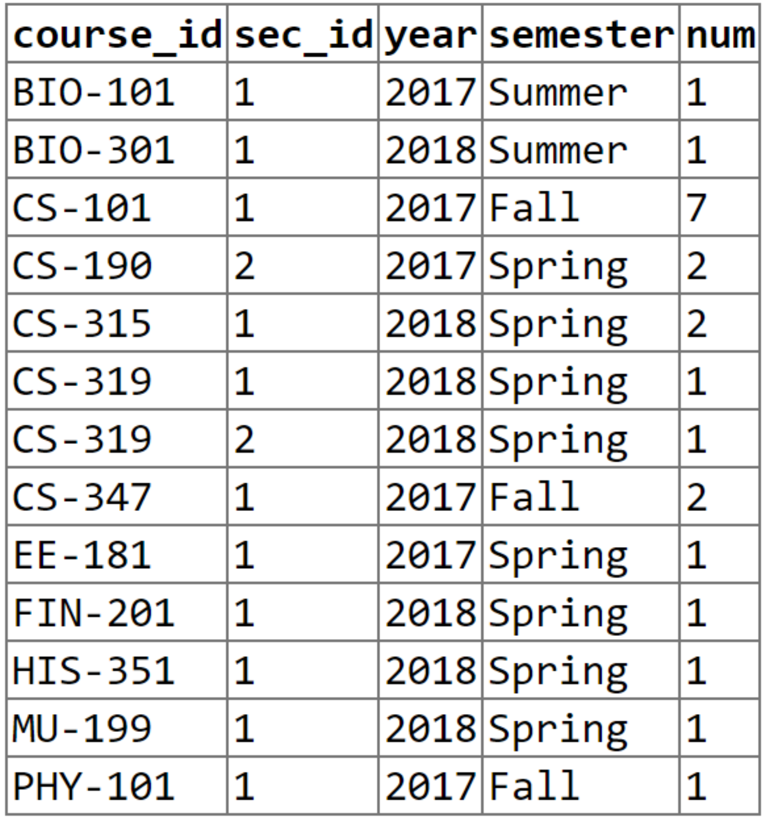


ID	name
22222	Einstein
76543	Singh
98345	Kim

SQL query to find the number of students in each section



```
SELECT course_id, sec_id, year, semester, COUNT(*) AS num
FROM takes
GROUP BY course_id, sec_id;
```



course_id	sec_id	year	semester	num
BIO-101	1	2017	Summer	1
BIO-301	1	2018	Summer	1
CS-101	1	2017	Fall	7
CS-190	2	2017	Spring	2
CS-315	1	2018	Spring	2
CS-319	1	2018	Spring	1
CS-319	2	2018	Spring	1
CS-347	1	2017	Fall	2
EE-181	1	2017	Spring	1
FIN-201	1	2018	Spring	1
HIS-351	1	2018	Spring	1
MU-199	1	2018	Spring	1
PHY-101	1	2017	Fall	1