CREATE TABLE instructor(

ID int primary key,

NAME varchar(20),

DEPARTMENT varchar(20),

SALARY int

);

INSERT INTO instructor (ID, NAME, DEPARTMENT,SALARY)

VALUES

(10101, 'Srinivasan', 'Comp. Sci.', 65000),

(12121, 'Wu', 'Finance', 90000),

(15151, 'Mozart', 'Music', 40000),

(22222, 'Einstein', 'Physics', 95000),

(32343, 'El Said', 'History', 60000),

(33456, 'Gold', 'Physics', 87000),

(45565, 'Katz', 'Comp. Sci.', 75000),

(58583, 'Califieri', 'History', 62000),

(76543, 'Singh', 'Finance', 80000),

(76766, 'Crick', 'Biology', 72000),

(83821, 'Brandt', 'Comp. Sci.', 92000),

(98345, 'Kim', 'Elec. Eng.', 80000);

SELECT \* FROM instructor;

+-------+------------+------------+--------+

| ID | NAME | DEPARTMENT | SALARY |

+-------+------------+------------+--------+

| 10101 | Srinivasan | Comp. Sci. | 65000 |

| 12121 | Wu | Finance | 90000 |

| 15151 | Mozart | Music | 40000 |

| 22222 | Einstein | Physics | 95000 |

| 32343 | El Said | History | 60000 |

| 33456 | Gold | Physics | 87000 |

| 45565 | Katz | Comp. Sci. | 75000 |

| 58583 | Califieri | History | 62000 |

| 76543 | Singh | Finance | 80000 |

| 76766 | Crick | Biology | 72000 |

| 83821 | Brandt | Comp. Sci. | 92000 |

| 98345 | Kim | Elec. Eng. | 80000 |

+-------+------------+------------+--------+

CREATE TABLE teaches (

ID INT ,

Course\_id VARCHAR(10),

sec\_id INT,

semester VARCHAR(10),

year INT

);

INSERT INTO teaches (ID, Course\_id, sec\_id, semester, year)

VALUES

(10101, 'CS-101', 1, 'Fall', 2017),

(10101, 'CS-315', 1, 'Spring', 2018),

(10101, 'CS-347', 1, 'Fall', 2017),

(12121, 'FIN-201', 1, 'Spring', 2018),

(15151, 'MU-199', 1, 'Spring', 2018),

(22222, 'PHY-101', 1, 'Fall', 2017),

(32343, 'HIS-351', 1, 'Spring', 2018),

(45565, 'CS-101', 1, 'Spring', 2018),

(45565, 'CS-319', 1, 'Spring', 2018),

(76766, 'BIO-101', 1, 'Summer', 2017),

(76766, 'BIO-301', 1, 'Summer', 2018),

(83821, 'CS-190', 1, 'Spring', 2017),

(83821, 'CS-190', 2, 'Spring', 2017),

(83821, 'CS-319', 2, 'Spring', 2018),

(98345, 'EE-181', 1, 'Spring', 2017);

SELECT \* FROM teaches;

+-------+-----------+--------+----------+------+

| ID | Course\_id | sec\_id | semester | year |

+-------+-----------+--------+----------+------+

| 10101 | CS-101 | 1 | Fall | 2017 |

| 10101 | CS-315 | 1 | Spring | 2018 |

| 10101 | CS-347 | 1 | Fall | 2017 |

| 12121 | FIN-201 | 1 | Spring | 2018 |

| 15151 | MU-199 | 1 | Spring | 2018 |

| 22222 | PHY-101 | 1 | Fall | 2017 |

| 32343 | HIS-351 | 1 | Spring | 2018 |

| 45565 | CS-101 | 1 | Spring | 2018 |

| 45565 | CS-319 | 1 | Spring | 2018 |

| 76766 | BIO-101 | 1 | Summer | 2017 |

| 76766 | BIO-301 | 1 | Summer | 2018 |

| 83821 | CS-190 | 1 | Spring | 2017 |

| 83821 | CS-190 | 2 | Spring | 2017 |

| 83821 | CS-319 | 2 | Spring | 2018 |

| 98345 | EE-181 | 1 | Spring | 2017 |

+-------+-----------+--------+----------+------+

INSERT INTO instructor (ID, NAME, DEPARTMENT, SALARY)

VALUES (10211, 'Smith', 'Biology', 66000);

DELETE FROM instructor WHERE ID="10211";

SELECT \*

FROM instructor

CROSS JOIN teaches;

+-------+------------+------------+--------+-------+-----------+--------+----------+------+

| ID | NAME | DEPARTMENT | SALARY | ID | Course\_id | sec\_id | semester | year |

+-------+------------+------------+--------+-------+-----------+--------+----------+------+

| 98345 | Kim | Elec. Eng. | 80000 | 10101 | CS-101 | 1 | Fall | 2017 |

| 83821 | Brandt | Comp. Sci. | 92000 | 10101 | CS-101 | 1 | Fall | 2017 |

| 76766 | Crick | Biology | 72000 | 10101 | CS-101 | 1 | Fall | 2017 |

| 76543 | Singh | Finance | 80000 | 10101 | CS-101 | 1 | Fall | 2017 |

| 58583 | Califieri | History | 62000 | 10101 | CS-101 | 1 | Fall | 2017 |

| 45565 | Katz | Comp. Sci. | 75000 | 10101 | CS-101 | 1 | Fall | 2017 |

| 33456 | Gold | Physics | 87000 | 10101 | CS-101 | 1 | Fall | 2017 |

| 32343 | El Said | History | 60000 | 10101 | CS-101 | 1 | Fall | 2017 |

| 22222 | Einstein | Physics | 95000 | 10101 | CS-101 | 1 | Fall | 2017 |

| 15151 | Mozart | Music | 40000 | 10101 | CS-101 | 1 | Fall | 2017 |

| 12121 | Wu | Finance | 90000 | 10101 | CS-101 | 1 | Fall | 2017 |

| 10101 | Srinivasan | Comp. Sci. | 65000 | 10101 | CS-101 | 1 | Fall | 2017 |

| 98345 | Kim | Elec. Eng. | 80000 | 10101 | CS-315 | 1 | Spring | 2018 |

| 83821 | Brandt | Comp. Sci. | 92000 | 10101 | CS-315 | 1 | Spring | 2018 |

| 76766 | Crick | Biology | 72000 | 10101 | CS-315 | 1 | Spring | 2018 |

| 76543 | Singh | Finance | 80000 | 10101 | CS-315 | 1 | Spring | 2018 |

| 58583 | Califieri | History | 62000 | 10101 | CS-315 | 1 | Spring | 2018 |

| 45565 | Katz | Comp. Sci. | 75000 | 10101 | CS-315 | 1 | Spring | 2018 |

| 33456 | Gold | Physics | 87000 | 10101 | CS-315 | 1 | Spring | 2018 |

| 32343 | El Said | History | 60000 | 10101 | CS-315 | 1 | Spring | 2018 |

| 22222 | Einstein | Physics | 95000 | 10101 | CS-315 | 1 | Spring | 2018 |

| 15151 | Mozart | Music | 40000 | 10101 | CS-315 | 1 | Spring | 2018 |

| 12121 | Wu | Finance | 90000 | 10101 | CS-315 | 1 | Spring | 2018 |

| 10101 | Srinivasan | Comp. Sci. | 65000 | 10101 | CS-315 | 1 | Spring | 2018 |

| 98345 | Kim | Elec. Eng. | 80000 | 10101 | CS-347 | 1 | Fall | 2017 |

| 83821 | Brandt | Comp. Sci. | 92000 | 10101 | CS-347 | 1 | Fall | 2017 |

| 76766 | Crick | Biology | 72000 | 10101 | CS-347 | 1 | Fall | 2017 |

| 76543 | Singh | Finance | 80000 | 10101 | CS-347 | 1 | Fall | 2017 |

| 58583 | Califieri | History | 62000 | 10101 | CS-347 | 1 | Fall | 2017 |

| 45565 | Katz | Comp. Sci. | 75000 | 10101 | CS-347 | 1 | Fall | 2017 |

| 33456 | Gold | Physics | 87000 | 10101 | CS-347 | 1 | Fall | 2017 |

| 32343 | El Said | History | 60000 | 10101 | CS-347 | 1 | Fall | 2017 |

| 22222 | Einstein | Physics | 95000 | 10101 | CS-347 | 1 | Fall | 2017 |

| 15151 | Mozart | Music | 40000 | 10101 | CS-347 | 1 | Fall | 2017 |

| 12121 | Wu | Finance | 90000 | 10101 | CS-347 | 1 | Fall | 2017 |

| 10101 | Srinivasan | Comp. Sci. | 65000 | 10101 | CS-347 | 1 | Fall | 2017 |

| 98345 | Kim | Elec. Eng. | 80000 | 12121 | FIN-201 | 1 | Spring | 2018 |

| 83821 | Brandt | Comp. Sci. | 92000 | 12121 | FIN-201 | 1 | Spring | 2018 |

| 76766 | Crick | Biology | 72000 | 12121 | FIN-201 | 1 | Spring | 2018 |

| 76543 | Singh | Finance | 80000 | 12121 | FIN-201 | 1 | Spring | 2018 |

| 58583 | Califieri | History | 62000 | 12121 | FIN-201 | 1 | Spring | 2018 |

| 45565 | Katz | Comp. Sci. | 75000 | 12121 | FIN-201 | 1 | Spring | 2018 |

| 33456 | Gold | Physics | 87000 | 12121 | FIN-201 | 1 | Spring | 2018 |

| 32343 | El Said | History | 60000 | 12121 | FIN-201 | 1 | Spring | 2018 |

| 22222 | Einstein | Physics | 95000 | 12121 | FIN-201 | 1 | Spring | 2018 |

| 15151 | Mozart | Music | 40000 | 12121 | FIN-201 | 1 | Spring | 2018 |

| 12121 | Wu | Finance | 90000 | 12121 | FIN-201 | 1 | Spring | 2018 |

| 10101 | Srinivasan | Comp. Sci. | 65000 | 12121 | FIN-201 | 1 | Spring | 2018 |

| 98345 | Kim | Elec. Eng. | 80000 | 15151 | MU-199 | 1 | Spring | 2018 |

| 83821 | Brandt | Comp. Sci. | 92000 | 15151 | MU-199 | 1 | Spring | 2018 |

| 76766 | Crick | Biology | 72000 | 15151 | MU-199 | 1 | Spring | 2018 |

| 76543 | Singh | Finance | 80000 | 15151 | MU-199 | 1 | Spring | 2018 |

| 58583 | Califieri | History | 62000 | 15151 | MU-199 | 1 | Spring | 2018 |

| 45565 | Katz | Comp. Sci. | 75000 | 15151 | MU-199 | 1 | Spring | 2018 |

| 33456 | Gold | Physics | 87000 | 15151 | MU-199 | 1 | Spring | 2018 |

| 32343 | El Said | History | 60000 | 15151 | MU-199 | 1 | Spring | 2018 |

| 22222 | Einstein | Physics | 95000 | 15151 | MU-199 | 1 | Spring | 2018 |

| 15151 | Mozart | Music | 40000 | 15151 | MU-199 | 1 | Spring | 2018 |

| 12121 | Wu | Finance | 90000 | 15151 | MU-199 | 1 | Spring | 2018 |

| 10101 | Srinivasan | Comp. Sci. | 65000 | 15151 | MU-199 | 1 | Spring | 2018 |

| 98345 | Kim | Elec. Eng. | 80000 | 22222 | PHY-101 | 1 | Fall | 2017 |

| 83821 | Brandt | Comp. Sci. | 92000 | 22222 | PHY-101 | 1 | Fall | 2017 |

| 76766 | Crick | Biology | 72000 | 22222 | PHY-101 | 1 | Fall | 2017 |

| 76543 | Singh | Finance | 80000 | 22222 | PHY-101 | 1 | Fall | 2017 |

| 58583 | Califieri | History | 62000 | 22222 | PHY-101 | 1 | Fall | 2017 |

| 45565 | Katz | Comp. Sci. | 75000 | 22222 | PHY-101 | 1 | Fall | 2017 |

| 33456 | Gold | Physics | 87000 | 22222 | PHY-101 | 1 | Fall | 2017 |

| 32343 | El Said | History | 60000 | 22222 | PHY-101 | 1 | Fall | 2017 |

| 22222 | Einstein | Physics | 95000 | 22222 | PHY-101 | 1 | Fall | 2017 |

| 15151 | Mozart | Music | 40000 | 22222 | PHY-101 | 1 | Fall | 2017 |

| 12121 | Wu | Finance | 90000 | 22222 | PHY-101 | 1 | Fall | 2017 |

| 10101 | Srinivasan | Comp. Sci. | 65000 | 22222 | PHY-101 | 1 | Fall | 2017 |

| 98345 | Kim | Elec. Eng. | 80000 | 32343 | HIS-351 | 1 | Spring | 2018 |

| 83821 | Brandt | Comp. Sci. | 92000 | 32343 | HIS-351 | 1 | Spring | 2018 |

| 76766 | Crick | Biology | 72000 | 32343 | HIS-351 | 1 | Spring | 2018 |

| 76543 | Singh | Finance | 80000 | 32343 | HIS-351 | 1 | Spring | 2018 |

| 58583 | Califieri | History | 62000 | 32343 | HIS-351 | 1 | Spring | 2018 |

| 45565 | Katz | Comp. Sci. | 75000 | 32343 | HIS-351 | 1 | Spring | 2018 |

| 33456 | Gold | Physics | 87000 | 32343 | HIS-351 | 1 | Spring | 2018 |

| 32343 | El Said | History | 60000 | 32343 | HIS-351 | 1 | Spring | 2018 |

| 22222 | Einstein | Physics | 95000 | 32343 | HIS-351 | 1 | Spring | 2018 |

| 15151 | Mozart | Music | 40000 | 32343 | HIS-351 | 1 | Spring | 2018 |

| 12121 | Wu | Finance | 90000 | 32343 | HIS-351 | 1 | Spring | 2018 |

| 10101 | Srinivasan | Comp. Sci. | 65000 | 32343 | HIS-351 | 1 | Spring | 2018 |

| 98345 | Kim | Elec. Eng. | 80000 | 45565 | CS-101 | 1 | Spring | 2018 |

| 83821 | Brandt | Comp. Sci. | 92000 | 45565 | CS-101 | 1 | Spring | 2018 |

| 76766 | Crick | Biology | 72000 | 45565 | CS-101 | 1 | Spring | 2018 |

| 76543 | Singh | Finance | 80000 | 45565 | CS-101 | 1 | Spring | 2018 |

| 58583 | Califieri | History | 62000 | 45565 | CS-101 | 1 | Spring | 2018 |

| 45565 | Katz | Comp. Sci. | 75000 | 45565 | CS-101 | 1 | Spring | 2018 |

| 33456 | Gold | Physics | 87000 | 45565 | CS-101 | 1 | Spring | 2018 |

| 32343 | El Said | History | 60000 | 45565 | CS-101 | 1 | Spring | 2018 |

| 22222 | Einstein | Physics | 95000 | 45565 | CS-101 | 1 | Spring | 2018 |

| 15151 | Mozart | Music | 40000 | 45565 | CS-101 | 1 | Spring | 2018 |

| 12121 | Wu | Finance | 90000 | 45565 | CS-101 | 1 | Spring | 2018 |

| 10101 | Srinivasan | Comp. Sci. | 65000 | 45565 | CS-101 | 1 | Spring | 2018 |

| 98345 | Kim | Elec. Eng. | 80000 | 45565 | CS-319 | 1 | Spring | 2018 |

| 83821 | Brandt | Comp. Sci. | 92000 | 45565 | CS-319 | 1 | Spring | 2018 |

| 76766 | Crick | Biology | 72000 | 45565 | CS-319 | 1 | Spring | 2018 |

| 76543 | Singh | Finance | 80000 | 45565 | CS-319 | 1 | Spring | 2018 |

| 58583 | Califieri | History | 62000 | 45565 | CS-319 | 1 | Spring | 2018 |

| 45565 | Katz | Comp. Sci. | 75000 | 45565 | CS-319 | 1 | Spring | 2018 |

| 33456 | Gold | Physics | 87000 | 45565 | CS-319 | 1 | Spring | 2018 |

| 32343 | El Said | History | 60000 | 45565 | CS-319 | 1 | Spring | 2018 |

| 22222 | Einstein | Physics | 95000 | 45565 | CS-319 | 1 | Spring | 2018 |

| 15151 | Mozart | Music | 40000 | 45565 | CS-319 | 1 | Spring | 2018 |

| 12121 | Wu | Finance | 90000 | 45565 | CS-319 | 1 | Spring | 2018 |

| 10101 | Srinivasan | Comp. Sci. | 65000 | 45565 | CS-319 | 1 | Spring | 2018 |

| 98345 | Kim | Elec. Eng. | 80000 | 76766 | BIO-101 | 1 | Summer | 2017 |

| 83821 | Brandt | Comp. Sci. | 92000 | 76766 | BIO-101 | 1 | Summer | 2017 |

| 76766 | Crick | Biology | 72000 | 76766 | BIO-101 | 1 | Summer | 2017 |

| 76543 | Singh | Finance | 80000 | 76766 | BIO-101 | 1 | Summer | 2017 |

| 58583 | Califieri | History | 62000 | 76766 | BIO-101 | 1 | Summer | 2017 |

| 45565 | Katz | Comp. Sci. | 75000 | 76766 | BIO-101 | 1 | Summer | 2017 |

| 33456 | Gold | Physics | 87000 | 76766 | BIO-101 | 1 | Summer | 2017 |

| 32343 | El Said | History | 60000 | 76766 | BIO-101 | 1 | Summer | 2017 |

| 22222 | Einstein | Physics | 95000 | 76766 | BIO-101 | 1 | Summer | 2017 |

| 15151 | Mozart | Music | 40000 | 76766 | BIO-101 | 1 | Summer | 2017 |

| 12121 | Wu | Finance | 90000 | 76766 | BIO-101 | 1 | Summer | 2017 |

| 10101 | Srinivasan | Comp. Sci. | 65000 | 76766 | BIO-101 | 1 | Summer | 2017 |

| 98345 | Kim | Elec. Eng. | 80000 | 76766 | BIO-301 | 1 | Summer | 2018 |

| 83821 | Brandt | Comp. Sci. | 92000 | 76766 | BIO-301 | 1 | Summer | 2018 |

| 76766 | Crick | Biology | 72000 | 76766 | BIO-301 | 1 | Summer | 2018 |

| 76543 | Singh | Finance | 80000 | 76766 | BIO-301 | 1 | Summer | 2018 |

| 58583 | Califieri | History | 62000 | 76766 | BIO-301 | 1 | Summer | 2018 |

| 45565 | Katz | Comp. Sci. | 75000 | 76766 | BIO-301 | 1 | Summer | 2018 |

| 33456 | Gold | Physics | 87000 | 76766 | BIO-301 | 1 | Summer | 2018 |

| 32343 | El Said | History | 60000 | 76766 | BIO-301 | 1 | Summer | 2018 |

| 22222 | Einstein | Physics | 95000 | 76766 | BIO-301 | 1 | Summer | 2018 |

| 15151 | Mozart | Music | 40000 | 76766 | BIO-301 | 1 | Summer | 2018 |

| 12121 | Wu | Finance | 90000 | 76766 | BIO-301 | 1 | Summer | 2018 |

| 10101 | Srinivasan | Comp. Sci. | 65000 | 76766 | BIO-301 | 1 | Summer | 2018 |

| 98345 | Kim | Elec. Eng. | 80000 | 83821 | CS-190 | 1 | Spring | 2017 |

| 83821 | Brandt | Comp. Sci. | 92000 | 83821 | CS-190 | 1 | Spring | 2017 |

| 76766 | Crick | Biology | 72000 | 83821 | CS-190 | 1 | Spring | 2017 |

| 76543 | Singh | Finance | 80000 | 83821 | CS-190 | 1 | Spring | 2017 |

| 58583 | Califieri | History | 62000 | 83821 | CS-190 | 1 | Spring | 2017 |

| 45565 | Katz | Comp. Sci. | 75000 | 83821 | CS-190 | 1 | Spring | 2017 |

| 33456 | Gold | Physics | 87000 | 83821 | CS-190 | 1 | Spring | 2017 |

| 32343 | El Said | History | 60000 | 83821 | CS-190 | 1 | Spring | 2017 |

| 22222 | Einstein | Physics | 95000 | 83821 | CS-190 | 1 | Spring | 2017 |

| 15151 | Mozart | Music | 40000 | 83821 | CS-190 | 1 | Spring | 2017 |

| 12121 | Wu | Finance | 90000 | 83821 | CS-190 | 1 | Spring | 2017 |

| 10101 | Srinivasan | Comp. Sci. | 65000 | 83821 | CS-190 | 1 | Spring | 2017 |

| 98345 | Kim | Elec. Eng. | 80000 | 83821 | CS-190 | 2 | Spring | 2017 |

| 83821 | Brandt | Comp. Sci. | 92000 | 83821 | CS-190 | 2 | Spring | 2017 |

| 76766 | Crick | Biology | 72000 | 83821 | CS-190 | 2 | Spring | 2017 |

| 76543 | Singh | Finance | 80000 | 83821 | CS-190 | 2 | Spring | 2017 |

| 58583 | Califieri | History | 62000 | 83821 | CS-190 | 2 | Spring | 2017 |

| 45565 | Katz | Comp. Sci. | 75000 | 83821 | CS-190 | 2 | Spring | 2017 |

| 33456 | Gold | Physics | 87000 | 83821 | CS-190 | 2 | Spring | 2017 |

| 32343 | El Said | History | 60000 | 83821 | CS-190 | 2 | Spring | 2017 |

| 22222 | Einstein | Physics | 95000 | 83821 | CS-190 | 2 | Spring | 2017 |

| 15151 | Mozart | Music | 40000 | 83821 | CS-190 | 2 | Spring | 2017 |

| 12121 | Wu | Finance | 90000 | 83821 | CS-190 | 2 | Spring | 2017 |

| 10101 | Srinivasan | Comp. Sci. | 65000 | 83821 | CS-190 | 2 | Spring | 2017 |

| 98345 | Kim | Elec. Eng. | 80000 | 83821 | CS-319 | 2 | Spring | 2018 |

| 83821 | Brandt | Comp. Sci. | 92000 | 83821 | CS-319 | 2 | Spring | 2018 |

| 76766 | Crick | Biology | 72000 | 83821 | CS-319 | 2 | Spring | 2018 |

| 76543 | Singh | Finance | 80000 | 83821 | CS-319 | 2 | Spring | 2018 |

| 58583 | Califieri | History | 62000 | 83821 | CS-319 | 2 | Spring | 2018 |

| 45565 | Katz | Comp. Sci. | 75000 | 83821 | CS-319 | 2 | Spring | 2018 |

| 33456 | Gold | Physics | 87000 | 83821 | CS-319 | 2 | Spring | 2018 |

| 32343 | El Said | History | 60000 | 83821 | CS-319 | 2 | Spring | 2018 |

| 22222 | Einstein | Physics | 95000 | 83821 | CS-319 | 2 | Spring | 2018 |

| 15151 | Mozart | Music | 40000 | 83821 | CS-319 | 2 | Spring | 2018 |

| 12121 | Wu | Finance | 90000 | 83821 | CS-319 | 2 | Spring | 2018 |

| 10101 | Srinivasan | Comp. Sci. | 65000 | 83821 | CS-319 | 2 | Spring | 2018 |

| 98345 | Kim | Elec. Eng. | 80000 | 98345 | EE-181 | 1 | Spring | 2017 |

| 83821 | Brandt | Comp. Sci. | 92000 | 98345 | EE-181 | 1 | Spring | 2017 |

| 76766 | Crick | Biology | 72000 | 98345 | EE-181 | 1 | Spring | 2017 |

| 76543 | Singh | Finance | 80000 | 98345 | EE-181 | 1 | Spring | 2017 |

| 58583 | Califieri | History | 62000 | 98345 | EE-181 | 1 | Spring | 2017 |

| 45565 | Katz | Comp. Sci. | 75000 | 98345 | EE-181 | 1 | Spring | 2017 |

| 33456 | Gold | Physics | 87000 | 98345 | EE-181 | 1 | Spring | 2017 |

| 32343 | El Said | History | 60000 | 98345 | EE-181 | 1 | Spring | 2017 |

| 22222 | Einstein | Physics | 95000 | 98345 | EE-181 | 1 | Spring | 2017 |

| 15151 | Mozart | Music | 40000 | 98345 | EE-181 | 1 | Spring | 2017 |

| 12121 | Wu | Finance | 90000 | 98345 | EE-181 | 1 | Spring | 2017 |

| 10101 | Srinivasan | Comp. Sci. | 65000 | 98345 | EE-181 | 1 | Spring | 2017 |

+-------+------------+------------+--------+-------+-----------+--------+----------+------+

SELECT instructor.NAME, teaches.Course\_id

FROM instructor

JOIN teaches ON instructor.ID = teaches.ID;

+------------+-----------+

| NAME | Course\_id |

+------------+-----------+

| Srinivasan | CS-101 |

| Srinivasan | CS-315 |

| Srinivasan | CS-347 |

| Wu | FIN-201 |

| Mozart | MU-199 |

| Einstein | PHY-101 |

| El Said | HIS-351 |

| Katz | CS-101 |

| Katz | CS-319 |

| Crick | BIO-101 |

| Crick | BIO-301 |

| Brandt | CS-190 |

| Brandt | CS-190 |

| Brandt | CS-319 |

| Kim | EE-181 |

+------------+-----------+

SELECT NAME FROM instructor WHERE NAME LIKE '%dar';

SELECT NAME FROM instructor WHERE

SALARY BETWEEN 90000 AND 100000;

+----------+

| NAME |

+----------+

| Wu |

| Einstein |

| Brandt |

+----------+

SELECT \* FROM instructor

ORDER BY SALARY;

+-------+------------+------------+--------+

| ID | NAME | DEPARTMENT | SALARY |

+-------+------------+------------+--------+

| 15151 | Mozart | Music | 40000 |

| 32343 | El Said | History | 60000 |

| 58583 | Califieri | History | 62000 |

| 10101 | Srinivasan | Comp. Sci. | 65000 |

| 76766 | Crick | Biology | 72000 |

| 45565 | Katz | Comp. Sci. | 75000 |

| 76543 | Singh | Finance | 80000 |

| 98345 | Kim | Elec. Eng. | 80000 |

| 33456 | Gold | Physics | 87000 |

| 12121 | Wu | Finance | 90000 |

| 83821 | Brandt | Comp. Sci. | 92000 |

| 22222 | Einstein | Physics | 95000 |

+-------+------------+------------+--------+

SELECT DISTINCT Course\_id

FROM teaches

WHERE semester='FALL' AND year='2017'

OR semester='SPRING' AND year='2018';

+-----------+

| Course\_id |

+-----------+

| CS-101 |

| CS-315 |

| CS-347 |

| FIN-201 |

| MU-199 |

| PHY-101 |

| HIS-351 |

| CS-319 |

+-----------+

SELECT DISTINCT Course\_id

FROM teaches

WHERE semester='FALL' AND year='2017'

AND semester='SPRING' AND year='2018';

SELECT DISTINCT Course\_id

FROM teaches

WHERE semester='FALL' AND year='2017'

AND NOT(semester='SPRING' AND year='2018');

+-----------+

| Course\_id |

+-----------+

| CS-101 |

| CS-347 |

| PHY-101 |

+-----------+

INSERT INTO instructor(ID, NAME, DEPARTMENT,SALARY)

VALUES

(10211, 'Smith', 'Biology', 66000),

(10212, 'Tom', 'Biology', NULL );

SELECT NAME FROM instructor

WHERE SALARY IS NULL;

+------+

| NAME |

+------+

| Tom |

+------+

SELECT AVG(SALARY)

FROM instructor

WHERE DEPARTMENT='Comp. Sci.';

+-------------+

| AVG(SALARY) |

+-------------+

| 77333.3333 |

+-------------+

SELECT DISTINCT COUNT(ID) FROM teaches

WHERE SEMESTER="SPRING" AND YEAR="2018";

+-----------+

| COUNT(ID) |

+-----------+

| 7 |

+-----------+

SELECT COUNT(\*) AS TEACHER\_COUNT

FROM teaches;

+---------------+

| TEACHER\_COUNT |

+---------------+

| 15 |

+---------------+

SELECT DEPARTMENT, AVG(SALARY) FROM instructor

GROUP BY DEPARTMENT;

+------------+-------------+

| DEPARTMENT | AVG(SALARY) |

+------------+-------------+

| Comp. Sci. | 77333.3333 |

| Biology | 69000.0000 |

| Finance | 85000.0000 |

| Music | 40000.0000 |

| Physics | 91000.0000 |

| History | 61000.0000 |

| Elec. Eng. | 80000.0000 |

+------------+-------------+

SELECT DEPARTMENT,AVG(SALARY)

FROM instructor

GROUP BY DEPARTMENT

HAVING AVG(SALARY)>42000;

+------------+-------------+

| DEPARTMENT | AVG(SALARY) |

+------------+-------------+

| Comp. Sci. | 77333.3333 |

| Biology | 69000.0000 |

| Finance | 85000.0000 |

| Physics | 91000.0000 |

| History | 61000.0000 |

| Elec. Eng. | 80000.0000 |

+------------+-------------+

SELECT NAME

FROM instructor

WHERE NAME NOT IN ('MOZART', 'EINSTEIN');

+------------+

| NAME |

+------------+

| Srinivasan |

| Smith |

| Tom |

| Wu |

| El Said |

| Gold |

| Katz |

| Califieri |

| Singh |

| Crick |

| Brandt |

| Kim |

+------------+

SELECT NAME

FROM instructor

WHERE SALARY > ANY (SELECT SALARY FROM instructor WHERE DEPARTMENT = 'Biology');

+----------+

| NAME |

+----------+

| Wu |

| Einstein |

| Gold |

| Katz |

| Singh |

| Crick |

| Brandt |

| Kim |

+----------+

SELECT NAME

FROM instructor

WHERE SALARY > ALL (SELECT SALARY FROM instructor WHERE DEPARTMENT = 'Biology');

SELECT DEPARTMENT, AVG(SALARY)

FROM instructor

GROUP BY DEPARTMENT

HAVING AVG(SALARY) > 42000;

+------------+-------------+

| DEPARTMENT | AVG(SALARY) |

+------------+-------------+

| Comp. Sci. | 77333.3333 |

| Biology | 69000.0000 |

| Finance | 85000.0000 |

| Physics | 91000.0000 |

| History | 61000.0000 |

| Elec. Eng. | 80000.0000 |

+------------+-------------+

SELECT DEPARTMENT, SUM(SALARY) AS TOTAL\_SALARY

FROM instructor

GROUP BY DEPARTMENT

HAVING SUM(SALARY) > (SELECT AVG(TOTAL\_SALARY) FROM (SELECT SUM(SALARY) AS TOTAL\_SALARY FROM instructor GROUP BY DEPARTMENT) AS AVG\_SALARY) ;

+------------+--------------+

| DEPARTMENT | TOTAL\_SALARY |

+------------+--------------+

| Comp. Sci. | 232000 |

| Finance | 170000 |

| Physics | 182000 |

+------------+--------------+

SELECT instructor.name AS instructor\_name, teaches.Course\_id

FROM instructor

JOIN teaches ON instructor.ID = teaches.ID;

+-----------------+-----------+

| instructor\_name | Course\_id |

+-----------------+-----------+

| Srinivasan | CS-101 |

| Srinivasan | CS-315 |

| Srinivasan | CS-347 |

| Wu | FIN-201 |

| Mozart | MU-199 |

| Einstein | PHY-101 |

| El Said | HIS-351 |

| Katz | CS-101 |

| Katz | CS-319 |

| Crick | BIO-101 |

| Crick | BIO-301 |

| Brandt | CS-190 |

| Brandt | CS-190 |

| Brandt | CS-319 |

| Kim | EE-181 |

+-----------------+-----------+

SELECT instructor.NAME as instructor\_name, teaches.Course\_id

FROM instructor

LEFT JOIN teaches ON instructor.ID = teaches.ID;

+-----------------+-----------+

| instructor\_name | Course\_id |

+-----------------+-----------+

| Srinivasan | CS-347 |

| Srinivasan | CS-315 |

| Srinivasan | CS-101 |

| Wu | FIN-201 |

| Mozart | MU-199 |

| Einstein | PHY-101 |

| El Said | HIS-351 |

| Gold | NULL |

| Katz | CS-319 |

| Katz | CS-101 |

| Califieri | NULL |

| Singh | NULL |

| Crick | BIO-301 |

| Crick | BIO-101 |

| Brandt | CS-319 |

| Brandt | CS-190 |

| Brandt | CS-190 |

| Kim | EE-181 |

+-----------------+-----------+

CREATE VIEW FACULTY AS SELECT ID, NAME, DEPARTMENT FROM instructor;

SELECT \* FROM FACULTY;

+-------+------------+------------+

| ID | NAME | DEPARTMENT |

+-------+------------+------------+

| 10101 | Srinivasan | Comp. Sci. |

| 12121 | Wu | Finance |

| 15151 | Mozart | Music |

| 22222 | Einstein | Physics |

| 32343 | El Said | History |

| 33456 | Gold | Physics |

| 45565 | Katz | Comp. Sci. |

| 58583 | Califieri | History |

| 76543 | Singh | Finance |

| 76766 | Crick | Biology |

| 83821 | Brandt | Comp. Sci. |

| 98345 | Kim | Elec. Eng. |

+-------+------------+------------+

CREATE USER new\_user@localhost IDENTIFIED BY "1234";

GRANT SELECT ON FACULTY TO new\_user@localhost;

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
|  |  |  | 0 ROWS AFFECTED |  |  |
|  |  |  |  |  |  |

CREATE VIEW FACULTY1 AS SELECT ID, NAME, DEPARTMENT FROM instructor;

SELECT \* FROM FACULTY;

+-------+------------+------------+

| ID | NAME | DEPARTMENT |

+-------+------------+------------+

| 10101 | Srinivasan | Comp. Sci. |

| 12121 | Wu | Finance |

| 15151 | Mozart | Music |

| 22222 | Einstein | Physics |

| 32343 | El Said | History |

| 33456 | Gold | Physics |

| 45565 | Katz | Comp. Sci. |

| 58583 | Califieri | History |

| 76543 | Singh | Finance |

| 76766 | Crick | Biology |

| 83821 | Brandt | Comp. Sci. |

| 98345 | Kim | Elec. Eng. |

+-------+------------+------------+

CREATE VIEW DEPT\_SALARY\_TOTAL AS SELECT DEPARTMENT, SUM(SALARY) AS TOTAL\_SALARY FROM instructor GROUP BY DEPARTMENT;

SELECT \* FROM DEPT\_SALARY\_TOTAL;

+------------+--------------+

| DEPARTMENT | TOTAL\_SALARY |

+------------+--------------+

| Comp. Sci. | 232000 |

| Finance | 170000 |

| Music | 40000 |

| Physics | 182000 |

| History | 122000 |

| Biology | 72000 |

| Elec. Eng. | 80000 |

+------------+--------------+

CREATE ROLE 'student';

GRANT SELECT ON FACULTY TO student;

CREATE USER riz@localhost IDENTIFIED BY 'root';

GRANT student TO riz@localhost;

GRANT ALL PRIVILEGES ON student.\* TO riz@localhost;

SELECT \* FROM FACULTY WHERE DEPARTMENT = 'Biology';

REVOKE student FROM riz@localhost;

DROP ROLE student;

GRANT SELECT ON FACULTY TO riz@localhost;

CREATE TABLE teaches2 (

ID INT NOT NULL,

course\_id VARCHAR(255) NOT NULL,

sec\_id INT NOT NULL,

semester VARCHAR(255) NOT NULL CHECK (semester IN ('Fall', 'Winter', 'Spring', 'Summer')),

year INT NOT NULL,

FOREIGN KEY (ID) REFERENCES instructor(ID)

);

CREATE INDEX idx\_ID ON teaches (ID);

DROP INDEX idx\_ID ON teaches;