**PATUAKHALI SCIENCE AND TECHNOLOGY UNIVERSITY**



**COURSE CODE CCE-224**

**SUBMITTED TO:**

### **Prof. Dr. Md Samsuzzaman**

### **Department of Computer and Communication Engineering**

**Faculty of Computer Science and Engineering**

**SUBMITTED BY:**

**Sandipta Saha**

ID: **2102056**,

Registration No: **10183**

**Faculty of Computer Science and Engineering**

**Day : Database(SQL)**

DAY - 03

**1.Find the names of all instructors.**

[SELECT](http://localhost/phpmyadmin/url.php?url=https://dev.mysql.com/doc/refman/8.0/en/select.html) name FROM instructor;

Lembr

Bawa

Yazdi

Wieland

DAgostino

Liley

Kean

Atanassov

Moreira

Gustafsson

Bourrier

Bondi

Soisalon-Soininen

Morris

Arias

Murata

Tung

Luo

Vicentino

Romero

Lent

Sarkar

Shuming

Konstantinides

Bancilhon

**2.Find the department names of all instructors**

[SELECT](http://localhost/phpmyadmin/url.php?url=https://dev.mysql.com/doc/refman/8.0/en/select.html) dept\_name FROM instructor;

dept\_name

Accounting

Accounting

Accounting

Accounting

Astronomy

Athletics

Athletics

Athletics

Athletics

Athletics

Biology

Biology

Comp. Sci.

Comp. Sci.

Cybernetics

Cybernetics

Cybernetics

Cybernetics

Elec. Eng.

Elec. Eng.

Elec. Eng.

Elec. Eng.

English

English

English

**3.Find the department names of all instructors with distict key.**

[SELECT](http://localhost/phpmyadmin/url.php?url=https://dev.mysql.com/doc/refman/8.0/en/select.html) DISTINCT dept\_name FROM instructor;

Accounting

Astronomy

Athletics

Biology

Comp. Sci.

Cybernetics

Elec. Eng.

English

Finance

Geology

Languages

Marketing

Mech. Eng.

Physics

Pol. Sci.

Psychology

Statistics

4.**Find the department names of all instructors with all key.**

[SELECT](http://localhost/phpmyadmin/url.php?url=https://dev.mysql.com/doc/refman/8.0/en/select.html) ALL dept\_name FROM instructor;

Accounting

Accounting

Accounting

Accounting

Astronomy

Athletics

Athletics

Athletics

Athletics

Athletics

Biology

Biology

Comp. Sci.

Comp. Sci.

Cybernetics

Cybernetics

Cybernetics

Cybernetics

Elec. Eng.

Elec. Eng.

Elec. Eng.

Elec. Eng.

English

English

English

5. The select clause may also contain arithmetic expressions involving the operators +, −, ∗, and / operating on constants or attributes of tuples.

S[ELECT](http://localhost/phpmyadmin/url.php?url=https://dev.mysql.com/doc/refman/8.0/en/select.html) id, name, dept\_name, salary \* 1.1 FROM instructor;

|  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  | | | | [**id**](http://localhost/phpmyadmin/index.php?route=/sql&db=Varsity&table=instructor&sql_query=SELECT+id%2C+name%2C+dept_name%2C+salary+%2A+1.1+FROM+instructor++%0AORDER+BY+%60id%60+ASC&sql_signature=0b417667037847f8672da28cc067d66ea4af301e6adaddeab738bfc32b645261&session_max_rows=25&is_browse_distinct=0) | [**name**](http://localhost/phpmyadmin/index.php?route=/sql&db=Varsity&table=instructor&sql_query=SELECT+id%2C+name%2C+dept_name%2C+salary+%2A+1.1+FROM+instructor++%0AORDER+BY+%60instructor%60.%60name%60+ASC&sql_signature=1f78292752cb376e750adbd9d4a997eb838e521d4241b5f584a87ee0d51ee690&session_max_rows=25&is_browse_distinct=0) | [**dept\_name**](http://localhost/phpmyadmin/index.php?route=/sql&db=Varsity&table=instructor&sql_query=SELECT+id%2C+name%2C+dept_name%2C+salary+%2A+1.1+FROM+instructor++%0AORDER+BY+%60instructor%60.%60dept_name%60+ASC&sql_signature=5c0498e5b07ee663bad509d9ed52f506901e3499659dca019c38f4a47bf3da62&session_max_rows=25&is_browse_distinct=0) | [**salary \* 1.1**](http://localhost/phpmyadmin/index.php?route=/sql&db=Varsity&table=instructor&sql_query=SELECT+id%2C+name%2C+dept_name%2C+salary+%2A+1.1+FROM+instructor++&sql_signature=4bea8b3c0a11bd5491e659f16e04abad0f1de7eb93ec8acd178e6280f932e79f&session_max_rows=25&is_browse_distinct=0) |  | | | |
|  | [Edit](http://localhost/phpmyadmin/index.php) | [Copy](http://localhost/phpmyadmin/index.php) | [Delete](http://localhost/phpmyadmin/index.php) | 14365 | Lembr | [Accounting](http://localhost/phpmyadmin/index.php?route=/sql&db=Varsity&table=department&pos=0&sql_signature=40587b2e3248eceeda4e2174435ab8dfffcf2f079f3719ce5278c25e0486a136&sql_query=SELECT+%2A+FROM+%60Varsity%60.%60department%60+WHERE+%60dept_name%60+%3D+%27Accounting%27) | 35465.716 |
|  | [Edit](http://localhost/phpmyadmin/index.php) | [Copy](http://localhost/phpmyadmin/index.php) | [Delete](http://localhost/phpmyadmin/index.php) | 15347 | Bawa | [Athletics](http://localhost/phpmyadmin/index.php?route=/sql&db=Varsity&table=department&pos=0&sql_signature=781ff846bfc9c2c7719f60193bfe90d3468eb7767cd5274b1d9eb8a505af4fc7&sql_query=SELECT+%2A+FROM+%60Varsity%60.%60department%60+WHERE+%60dept_name%60+%3D+%27Athletics%27) | 79354.968 |
|  | [Edit](http://localhost/phpmyadmin/index.php) | [Copy](http://localhost/phpmyadmin/index.php) | [Delete](http://localhost/phpmyadmin/index.php) | 16807 | Yazdi | [Athletics](http://localhost/phpmyadmin/index.php?route=/sql&db=Varsity&table=department&pos=0&sql_signature=781ff846bfc9c2c7719f60193bfe90d3468eb7767cd5274b1d9eb8a505af4fc7&sql_query=SELECT+%2A+FROM+%60Varsity%60.%60department%60+WHERE+%60dept_name%60+%3D+%27Athletics%27) | 108167.015 |
|  | [Edit](http://localhost/phpmyadmin/index.php) | [Copy](http://localhost/phpmyadmin/index.php) | [Delete](http://localhost/phpmyadmin/index.php) | 19368 | Wieland | [Pol. Sci.](http://localhost/phpmyadmin/index.php?route=/sql&db=Varsity&table=department&pos=0&sql_signature=5ea71eccfb766ff3f5677dcb9362412df5c9668a8def82af475677b632e28c07&sql_query=SELECT+%2A+FROM+%60Varsity%60.%60department%60+WHERE+%60dept_name%60+%3D+%27Pol.+Sci.%27) | 137116.551 |
|  | [Edit](http://localhost/phpmyadmin/index.php) | [Copy](http://localhost/phpmyadmin/index.php) | [Delete](http://localhost/phpmyadmin/index.php) | 22591 | DAgostino | [Psychology](http://localhost/phpmyadmin/index.php?route=/sql&db=Varsity&table=department&pos=0&sql_signature=6640b8fe48d2b49788d9a375260a9732c5d5c7d962e415460c9beea895c52dfe&sql_query=SELECT+%2A+FROM+%60Varsity%60.%60department%60+WHERE+%60dept_name%60+%3D+%27Psychology%27) | 65677.139 |
|  | [Edit](http://localhost/phpmyadmin/index.php) | [Copy](http://localhost/phpmyadmin/index.php) | [Delete](http://localhost/phpmyadmin/index.php) | 25946 | Liley | [Languages](http://localhost/phpmyadmin/index.php?route=/sql&db=Varsity&table=department&pos=0&sql_signature=3c53f502ff55854027c8b321cf6a376d9f0c40584b19af58dd3efad788ca7751&sql_query=SELECT+%2A+FROM+%60Varsity%60.%60department%60+WHERE+%60dept_name%60+%3D+%27Languages%27) | 99980.859 |
|  | [Edit](http://localhost/phpmyadmin/index.php) | [Copy](http://localhost/phpmyadmin/index.php) | [Delete](http://localhost/phpmyadmin/index.php) | 28097 | Kean | [English](http://localhost/phpmyadmin/index.php?route=/sql&db=Varsity&table=department&pos=0&sql_signature=490f09909a325edb30b2cbbd3642520d1a99647145f408846f60e6daceef6109&sql_query=SELECT+%2A+FROM+%60Varsity%60.%60department%60+WHERE+%60dept_name%60+%3D+%27English%27) | 38525.498 |
|  | [Edit](http://localhost/phpmyadmin/index.php) | [Copy](http://localhost/phpmyadmin/index.php) | [Delete](http://localhost/phpmyadmin/index.php) | 28400 | Atanassov | [Statistics](http://localhost/phpmyadmin/index.php?route=/sql&db=Varsity&table=department&pos=0&sql_signature=940e84431115da4bdfdb5a9730c918db9f2f33a574b431042c9cec67a2b86564&sql_query=SELECT+%2A+FROM+%60Varsity%60.%60department%60+WHERE+%60dept_name%60+%3D+%27Statistics%27) | 93481.212 |
|  | [Edit](http://localhost/phpmyadmin/index.php) | [Copy](http://localhost/phpmyadmin/index.php) | [Delete](http://localhost/phpmyadmin/index.php) | 31955 | Moreira | [Accounting](http://localhost/phpmyadmin/index.php?route=/sql&db=Varsity&table=department&pos=0&sql_signature=40587b2e3248eceeda4e2174435ab8dfffcf2f079f3719ce5278c25e0486a136&sql_query=SELECT+%2A+FROM+%60Varsity%60.%60department%60+WHERE+%60dept_name%60+%3D+%27Accounting%27) | 78486.562 |
|  | [Edit](http://localhost/phpmyadmin/index.php) | [Copy](http://localhost/phpmyadmin/index.php) | [Delete](http://localhost/phpmyadmin/index.php) | 3199 | Gustafsson | [Elec. Eng.](http://localhost/phpmyadmin/index.php?route=/sql&db=Varsity&table=department&pos=0&sql_signature=cb6ae9a5b594179115c487ba6278ba905b01dadc1dd5b7843df4db009d8df1b6&sql_query=SELECT+%2A+FROM+%60Varsity%60.%60department%60+WHERE+%60dept_name%60+%3D+%27Elec.+Eng.%27) | 90787.807 |
|  | [Edit](http://localhost/phpmyadmin/index.php) | [Copy](http://localhost/phpmyadmin/index.php) | [Delete](http://localhost/phpmyadmin/index.php) | 3335 | Bourrier | [Comp. Sci.](http://localhost/phpmyadmin/index.php?route=/sql&db=Varsity&table=department&pos=0&sql_signature=e16d0cba043adb1138a37c9a8e0dc883fbc9bee5f8594f5ade4468859e12c01c&sql_query=SELECT+%2A+FROM+%60Varsity%60.%60department%60+WHERE+%60dept_name%60+%3D+%27Comp.+Sci.%27) | 88877.613 |
|  | [Edit](http://localhost/phpmyadmin/index.php) | [Copy](http://localhost/phpmyadmin/index.php) | [Delete](http://localhost/phpmyadmin/index.php) | 34175 | Bondi | [Comp. Sci.](http://localhost/phpmyadmin/index.php?route=/sql&db=Varsity&table=department&pos=0&sql_signature=e16d0cba043adb1138a37c9a8e0dc883fbc9bee5f8594f5ade4468859e12c01c&sql_query=SELECT+%2A+FROM+%60Varsity%60.%60department%60+WHERE+%60dept_name%60+%3D+%27Comp.+Sci.%27) | 127016.021 |
|  | [Edit](http://localhost/phpmyadmin/index.php) | [Copy](http://localhost/phpmyadmin/index.php) | [Delete](http://localhost/phpmyadmin/index.php) | 35579 | Soisalon-Soininen | [Psychology](http://localhost/phpmyadmin/index.php?route=/sql&db=Varsity&table=department&pos=0&sql_signature=6640b8fe48d2b49788d9a375260a9732c5d5c7d962e415460c9beea895c52dfe&sql_query=SELECT+%2A+FROM+%60Varsity%60.%60department%60+WHERE+%60dept_name%60+%3D+%27Psychology%27) | 68837.571 |
|  | [Edit](http://localhost/phpmyadmin/index.php) | [Copy](http://localhost/phpmyadmin/index.php) | [Delete](http://localhost/phpmyadmin/index.php) | 36897 | Morris | [Marketing](http://localhost/phpmyadmin/index.php?route=/sql&db=Varsity&table=department&pos=0&sql_signature=7f84034c4f45f2b3f7704a05f643894817748b7030e289f551bad89593e8cfeb&sql_query=SELECT+%2A+FROM+%60Varsity%60.%60department%60+WHERE+%60dept_name%60+%3D+%27Marketing%27) | 48147.396 |
|  | [Edit](http://localhost/phpmyadmin/index.php) | [Copy](http://localhost/phpmyadmin/index.php) | [Delete](http://localhost/phpmyadmin/index.php) | 37687 | Arias | [Statistics](http://localhost/phpmyadmin/index.php?route=/sql&db=Varsity&table=department&pos=0&sql_signature=940e84431115da4bdfdb5a9730c918db9f2f33a574b431042c9cec67a2b86564&sql_query=SELECT+%2A+FROM+%60Varsity%60.%60department%60+WHERE+%60dept_name%60+%3D+%27Statistics%27) | 115019.718 |
|  | [Edit](http://localhost/phpmyadmin/index.php) | [Copy](http://localhost/phpmyadmin/index.php) | [Delete](http://localhost/phpmyadmin/index.php) | 4034 | Murata | [Athletics](http://localhost/phpmyadmin/index.php?route=/sql&db=Varsity&table=department&pos=0&sql_signature=781ff846bfc9c2c7719f60193bfe90d3468eb7767cd5274b1d9eb8a505af4fc7&sql_query=SELECT+%2A+FROM+%60Varsity%60.%60department%60+WHERE+%60dept_name%60+%3D+%27Athletics%27) | 67526.316 |
|  | [Edit](http://localhost/phpmyadmin/index.php) | [Copy](http://localhost/phpmyadmin/index.php) | [Delete](http://localhost/phpmyadmin/index.php) | 41930 | Tung | [Athletics](http://localhost/phpmyadmin/index.php?route=/sql&db=Varsity&table=department&pos=0&sql_signature=781ff846bfc9c2c7719f60193bfe90d3468eb7767cd5274b1d9eb8a505af4fc7&sql_query=SELECT+%2A+FROM+%60Varsity%60.%60department%60+WHERE+%60dept_name%60+%3D+%27Athletics%27) | 55530.233 |
|  | [Edit](http://localhost/phpmyadmin/index.php) | [Copy](http://localhost/phpmyadmin/index.php) | [Delete](http://localhost/phpmyadmin/index.php) | 4233 | Luo | [English](http://localhost/phpmyadmin/index.php?route=/sql&db=Varsity&table=department&pos=0&sql_signature=490f09909a325edb30b2cbbd3642520d1a99647145f408846f60e6daceef6109&sql_query=SELECT+%2A+FROM+%60Varsity%60.%60department%60+WHERE+%60dept_name%60+%3D+%27English%27) | 97670.595 |
|  | [Edit](http://localhost/phpmyadmin/index.php) | [Copy](http://localhost/phpmyadmin/index.php) | [Delete](http://localhost/phpmyadmin/index.php) | 42782 | Vicentino | [Elec. Eng.](http://localhost/phpmyadmin/index.php?route=/sql&db=Varsity&table=department&pos=0&sql_signature=cb6ae9a5b594179115c487ba6278ba905b01dadc1dd5b7843df4db009d8df1b6&sql_query=SELECT+%2A+FROM+%60Varsity%60.%60department%60+WHERE+%60dept_name%60+%3D+%27Elec.+Eng.%27) | 37699.937 |
|  | [Edit](http://localhost/phpmyadmin/index.php) | [Copy](http://localhost/phpmyadmin/index.php) | [Delete](http://localhost/phpmyadmin/index.php) | 43779 | Romero | [Astronomy](http://localhost/phpmyadmin/index.php?route=/sql&db=Varsity&table=department&pos=0&sql_signature=3d235bfbf6d7ac89b18c3a6ba47b3616521330e2de647f449500afd28cdc529f&sql_query=SELECT+%2A+FROM+%60Varsity%60.%60department%60+WHERE+%60dept_name%60+%3D+%27Astronomy%27) | 86977.088 |
|  | [Edit](http://localhost/phpmyadmin/index.php) | [Copy](http://localhost/phpmyadmin/index.php) | [Delete](http://localhost/phpmyadmin/index.php) | 48507 | Lent | [Mech. Eng.](http://localhost/phpmyadmin/index.php?route=/sql&db=Varsity&table=department&pos=0&sql_signature=5df6781bc10bfcca5a51fe1e769e67939dd77abce9287fa1a615009316fa84c1&sql_query=SELECT+%2A+FROM+%60Varsity%60.%60department%60+WHERE+%60dept_name%60+%3D+%27Mech.+Eng.%27) | 118776.317 |
|  | [Edit](http://localhost/phpmyadmin/index.php) | [Copy](http://localhost/phpmyadmin/index.php) | [Delete](http://localhost/phpmyadmin/index.php) | 48570 | Sarkar | [Pol. Sci.](http://localhost/phpmyadmin/index.php?route=/sql&db=Varsity&table=department&pos=0&sql_signature=5ea71eccfb766ff3f5677dcb9362412df5c9668a8def82af475677b632e28c07&sql_query=SELECT+%2A+FROM+%60Varsity%60.%60department%60+WHERE+%60dept_name%60+%3D+%27Pol.+Sci.%27) | 96304.780 |
|  | [Edit](http://localhost/phpmyadmin/index.php) | [Copy](http://localhost/phpmyadmin/index.php) | [Delete](http://localhost/phpmyadmin/index.php) | 50330 | Shuming | [Physics](http://localhost/phpmyadmin/index.php?route=/sql&db=Varsity&table=department&pos=0&sql_signature=b312b8eb95784c4f361b8f5df90dee43ca7616ea39bbd47e0684e7cb54b6cc9b&sql_query=SELECT+%2A+FROM+%60Varsity%60.%60department%60+WHERE+%60dept_name%60+%3D+%27Physics%27) | 118812.991 |
|  | [Edit](http://localhost/phpmyadmin/index.php) | [Copy](http://localhost/phpmyadmin/index.php) | [Delete](http://localhost/phpmyadmin/index.php) | 50885 | Konstantinides | [Languages](http://localhost/phpmyadmin/index.php?route=/sql&db=Varsity&table=department&pos=0&sql_signature=3c53f502ff55854027c8b321cf6a376d9f0c40584b19af58dd3efad788ca7751&sql_query=SELECT+%2A+FROM+%60Varsity%60.%60department%60+WHERE+%60dept_name%60+%3D+%27Languages%27) | 35827.550 |
|  | [Edit](http://localhost/phpmyadmin/index.php) | [Copy](http://localhost/phpmyadmin/index.php) | [Delete](http://localhost/phpmyadmin/index.php) | 52647 | Bancilhon | [Pol. Sci.](http://localhost/phpmyadmin/index.php?route=/sql&db=Varsity&table=department&pos=0&sql_signature=5ea71eccfb766ff3f5677dcb9362412df5c9668a8def82af475677b632e28c07&sql_query=SELECT+%2A+FROM+%60Varsity%60.%60department%60+WHERE+%60dept_name%60+%3D+%27Pol.+Sci.%27) | 96753.811 |

6. Find the names of all instructors in the Computer Science department who have salary greater than $70,000.

[SELECT](http://localhost/phpmyadmin/url.php?url=https://dev.mysql.com/doc/refman/8.0/en/select.html) name FROM instructor WHERE dept\_name = 'Comp. Sci.' [and](http://localhost/phpmyadmin/url.php?url=https://dev.mysql.com/doc/refman/8.0/en/logical-operators.html%23operator_and) salary > 70000;

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| [**name**](http://localhost/phpmyadmin/index.php?route=/sql&db=Varsity&table=instructor&sql_query=SELECT+name+FROM+instructor+WHERE+dept_name+%3D+%27Comp.+Sci.%27+and+salary+%3E+70000++%0AORDER+BY+%60instructor%60.%60name%60+ASC&sql_signature=8e0aae52f7ddcdcc80236df993d959feb00c91096a56612ed352d45fd3fba8fb&session_max_rows=25&is_browse_distinct=0) |  | | | |
|  | [Edit](http://localhost/phpmyadmin/index.php) | [Copy](http://localhost/phpmyadmin/index.php) | [Delete](http://localhost/phpmyadmin/index.php) | Bourrier |
|  | [Edit](http://localhost/phpmyadmin/index.php) | [Copy](http://localhost/phpmyadmin/index.php) | [Delete](http://localhost/phpmyadmin/index.php) | Bondi |

7. In SQL, to answer the above query, we list the relations that need to be accessed in the from clause and specify the matching condition in the where clause.

[SELECT](http://localhost/phpmyadmin/url.php?url=https://dev.mysql.com/doc/refman/8.0/en/select.html) name, instructor.dept\_name, building FROM instructor, department WHERE instructor.dept\_name = department.dept\_name;

|  |  |  |  |
| --- | --- | --- | --- |
| [**name**](http://localhost/phpmyadmin/index.php?route=/sql&db=Varsity&table=instructor&sql_query=SELECT+name%2C+instructor.dept_name%2C+building%0D%0AFROM+instructor%2C+department%0D%0AWHERE+instructor.dept_name+%3D+department.dept_name++%0AORDER+BY+%60instructor%60.%60name%60+ASC&sql_signature=6f3553c71fdcaa9ad21dcfe88f7467cd1bb26af4df868f88cc762be924147c5b&session_max_rows=25&is_browse_distinct=0) | [**dept\_name**](http://localhost/phpmyadmin/index.php?route=/sql&db=Varsity&table=instructor&sql_query=SELECT+name%2C+instructor.dept_name%2C+building%0D%0AFROM+instructor%2C+department%0D%0AWHERE+instructor.dept_name+%3D+department.dept_name++%0AORDER+BY+%60instructor%60.%60dept_name%60+ASC&sql_signature=c5ccf6b66ef886af7982de234464cd6a3f16369e56c6bb7b380cd9ffea005b69&session_max_rows=25&is_browse_distinct=0) | [**building**](http://localhost/phpmyadmin/index.php?route=/sql&db=Varsity&table=instructor&sql_query=SELECT+name%2C+instructor.dept_name%2C+building%0D%0AFROM+instructor%2C+department%0D%0AWHERE+instructor.dept_name+%3D+department.dept_name++%0AORDER+BY+%60department%60.%60building%60+ASC&sql_signature=e52eb3ea38e35a9cb1eea91470dc5b53dc887d9e4de72807fae944c757c9edb2&session_max_rows=25&is_browse_distinct=0) |  |
| Lembr | [Accounting](http://localhost/phpmyadmin/index.php?route=/sql&db=Varsity&table=department&pos=0&sql_signature=40587b2e3248eceeda4e2174435ab8dfffcf2f079f3719ce5278c25e0486a136&sql_query=SELECT+%2A+FROM+%60Varsity%60.%60department%60+WHERE+%60dept_name%60+%3D+%27Accounting%27) | Saucon |
| Moreira | [Accounting](http://localhost/phpmyadmin/index.php?route=/sql&db=Varsity&table=department&pos=0&sql_signature=40587b2e3248eceeda4e2174435ab8dfffcf2f079f3719ce5278c25e0486a136&sql_query=SELECT+%2A+FROM+%60Varsity%60.%60department%60+WHERE+%60dept_name%60+%3D+%27Accounting%27) | Saucon |
| Hau | [Accounting](http://localhost/phpmyadmin/index.php?route=/sql&db=Varsity&table=department&pos=0&sql_signature=40587b2e3248eceeda4e2174435ab8dfffcf2f079f3719ce5278c25e0486a136&sql_query=SELECT+%2A+FROM+%60Varsity%60.%60department%60+WHERE+%60dept_name%60+%3D+%27Accounting%27) | Saucon |
| Ullman | [Accounting](http://localhost/phpmyadmin/index.php?route=/sql&db=Varsity&table=department&pos=0&sql_signature=40587b2e3248eceeda4e2174435ab8dfffcf2f079f3719ce5278c25e0486a136&sql_query=SELECT+%2A+FROM+%60Varsity%60.%60department%60+WHERE+%60dept_name%60+%3D+%27Accounting%27) | Saucon |
| Romero | [Astronomy](http://localhost/phpmyadmin/index.php?route=/sql&db=Varsity&table=department&pos=0&sql_signature=3d235bfbf6d7ac89b18c3a6ba47b3616521330e2de647f449500afd28cdc529f&sql_query=SELECT+%2A+FROM+%60Varsity%60.%60department%60+WHERE+%60dept_name%60+%3D+%27Astronomy%27) | Taylor |
| Bawa | [Athletics](http://localhost/phpmyadmin/index.php?route=/sql&db=Varsity&table=department&pos=0&sql_signature=781ff846bfc9c2c7719f60193bfe90d3468eb7767cd5274b1d9eb8a505af4fc7&sql_query=SELECT+%2A+FROM+%60Varsity%60.%60department%60+WHERE+%60dept_name%60+%3D+%27Athletics%27) | Bronfman |
| Yazdi | [Athletics](http://localhost/phpmyadmin/index.php?route=/sql&db=Varsity&table=department&pos=0&sql_signature=781ff846bfc9c2c7719f60193bfe90d3468eb7767cd5274b1d9eb8a505af4fc7&sql_query=SELECT+%2A+FROM+%60Varsity%60.%60department%60+WHERE+%60dept_name%60+%3D+%27Athletics%27) | Bronfman |
| Murata | [Athletics](http://localhost/phpmyadmin/index.php?route=/sql&db=Varsity&table=department&pos=0&sql_signature=781ff846bfc9c2c7719f60193bfe90d3468eb7767cd5274b1d9eb8a505af4fc7&sql_query=SELECT+%2A+FROM+%60Varsity%60.%60department%60+WHERE+%60dept_name%60+%3D+%27Athletics%27) | Bronfman |
| Tung | [Athletics](http://localhost/phpmyadmin/index.php?route=/sql&db=Varsity&table=department&pos=0&sql_signature=781ff846bfc9c2c7719f60193bfe90d3468eb7767cd5274b1d9eb8a505af4fc7&sql_query=SELECT+%2A+FROM+%60Varsity%60.%60department%60+WHERE+%60dept_name%60+%3D+%27Athletics%27) | Bronfman |
| Jaekel | [Athletics](http://localhost/phpmyadmin/index.php?route=/sql&db=Varsity&table=department&pos=0&sql_signature=781ff846bfc9c2c7719f60193bfe90d3468eb7767cd5274b1d9eb8a505af4fc7&sql_query=SELECT+%2A+FROM+%60Varsity%60.%60department%60+WHERE+%60dept_name%60+%3D+%27Athletics%27) | Bronfman |
| Queiroz | [Biology](http://localhost/phpmyadmin/index.php?route=/sql&db=Varsity&table=department&pos=0&sql_signature=2f263d266e085445b0daa9b13932d032d66b17c62b1911ac12f74cd50321b635&sql_query=SELECT+%2A+FROM+%60Varsity%60.%60department%60+WHERE+%60dept_name%60+%3D+%27Biology%27) | Candlestick |
| Valtchev | [Biology](http://localhost/phpmyadmin/index.php?route=/sql&db=Varsity&table=department&pos=0&sql_signature=2f263d266e085445b0daa9b13932d032d66b17c62b1911ac12f74cd50321b635&sql_query=SELECT+%2A+FROM+%60Varsity%60.%60department%60+WHERE+%60dept_name%60+%3D+%27Biology%27) | Candlestick |
| Bourrier | [Comp. Sci.](http://localhost/phpmyadmin/index.php?route=/sql&db=Varsity&table=department&pos=0&sql_signature=e16d0cba043adb1138a37c9a8e0dc883fbc9bee5f8594f5ade4468859e12c01c&sql_query=SELECT+%2A+FROM+%60Varsity%60.%60department%60+WHERE+%60dept_name%60+%3D+%27Comp.+Sci.%27) | Lamberton |
| Bondi | [Comp. Sci.](http://localhost/phpmyadmin/index.php?route=/sql&db=Varsity&table=department&pos=0&sql_signature=e16d0cba043adb1138a37c9a8e0dc883fbc9bee5f8594f5ade4468859e12c01c&sql_query=SELECT+%2A+FROM+%60Varsity%60.%60department%60+WHERE+%60dept_name%60+%3D+%27Comp.+Sci.%27) | Lamberton |
| McKinnon | [Cybernetics](http://localhost/phpmyadmin/index.php?route=/sql&db=Varsity&table=department&pos=0&sql_signature=a38196631c7d3f5ae223f9cccd2b5dc8e8da968e78a5d5ecda2551d93c831728&sql_query=SELECT+%2A+FROM+%60Varsity%60.%60department%60+WHERE+%60dept_name%60+%3D+%27Cybernetics%27) | Mercer |
| Pimenta | [Cybernetics](http://localhost/phpmyadmin/index.php?route=/sql&db=Varsity&table=department&pos=0&sql_signature=a38196631c7d3f5ae223f9cccd2b5dc8e8da968e78a5d5ecda2551d93c831728&sql_query=SELECT+%2A+FROM+%60Varsity%60.%60department%60+WHERE+%60dept_name%60+%3D+%27Cybernetics%27) | Mercer |
| Bietzk | [Cybernetics](http://localhost/phpmyadmin/index.php?route=/sql&db=Varsity&table=department&pos=0&sql_signature=a38196631c7d3f5ae223f9cccd2b5dc8e8da968e78a5d5ecda2551d93c831728&sql_query=SELECT+%2A+FROM+%60Varsity%60.%60department%60+WHERE+%60dept_name%60+%3D+%27Cybernetics%27) | Mercer |
| Dale | [Cybernetics](http://localhost/phpmyadmin/index.php?route=/sql&db=Varsity&table=department&pos=0&sql_signature=a38196631c7d3f5ae223f9cccd2b5dc8e8da968e78a5d5ecda2551d93c831728&sql_query=SELECT+%2A+FROM+%60Varsity%60.%60department%60+WHERE+%60dept_name%60+%3D+%27Cybernetics%27) | Mercer |
| Gustafsson | [Elec. Eng.](http://localhost/phpmyadmin/index.php?route=/sql&db=Varsity&table=department&pos=0&sql_signature=cb6ae9a5b594179115c487ba6278ba905b01dadc1dd5b7843df4db009d8df1b6&sql_query=SELECT+%2A+FROM+%60Varsity%60.%60department%60+WHERE+%60dept_name%60+%3D+%27Elec.+Eng.%27) | Main |
| Vicentino | [Elec. Eng.](http://localhost/phpmyadmin/index.php?route=/sql&db=Varsity&table=department&pos=0&sql_signature=cb6ae9a5b594179115c487ba6278ba905b01dadc1dd5b7843df4db009d8df1b6&sql_query=SELECT+%2A+FROM+%60Varsity%60.%60department%60+WHERE+%60dept_name%60+%3D+%27Elec.+Eng.%27) | Main |
| Sullivan | [Elec. Eng.](http://localhost/phpmyadmin/index.php?route=/sql&db=Varsity&table=department&pos=0&sql_signature=cb6ae9a5b594179115c487ba6278ba905b01dadc1dd5b7843df4db009d8df1b6&sql_query=SELECT+%2A+FROM+%60Varsity%60.%60department%60+WHERE+%60dept_name%60+%3D+%27Elec.+Eng.%27) | Main |
| Levine | [Elec. Eng.](http://localhost/phpmyadmin/index.php?route=/sql&db=Varsity&table=department&pos=0&sql_signature=cb6ae9a5b594179115c487ba6278ba905b01dadc1dd5b7843df4db009d8df1b6&sql_query=SELECT+%2A+FROM+%60Varsity%60.%60department%60+WHERE+%60dept_name%60+%3D+%27Elec.+Eng.%27) | Main |
| Kean | [English](http://localhost/phpmyadmin/index.php?route=/sql&db=Varsity&table=department&pos=0&sql_signature=490f09909a325edb30b2cbbd3642520d1a99647145f408846f60e6daceef6109&sql_query=SELECT+%2A+FROM+%60Varsity%60.%60department%60+WHERE+%60dept_name%60+%3D+%27English%27) | Palmer |
| Luo | [English](http://localhost/phpmyadmin/index.php?route=/sql&db=Varsity&table=department&pos=0&sql_signature=490f09909a325edb30b2cbbd3642520d1a99647145f408846f60e6daceef6109&sql_query=SELECT+%2A+FROM+%60Varsity%60.%60department%60+WHERE+%60dept_name%60+%3D+%27English%27) | Palmer |
| Yin | [English](http://localhost/phpmyadmin/index.php?route=/sql&db=Varsity&table=department&pos=0&sql_signature=490f09909a325edb30b2cbbd3642520d1a99647145f408846f60e6daceef6109&sql_query=SELECT+%2A+FROM+%60Varsity%60.%60department%60+WHERE+%60dept_name%60+%3D+%27English%27) | Palmer |

8. The Cartesian product of the instructor relation with the teaches relation.

[SELECT](http://localhost/phpmyadmin/url.php?url=https://dev.mysql.com/doc/refman/8.0/en/select.html) name, course\_id FROM instructor, teaches WHERE instructor.ID = teaches.ID;

|  |  |  |
| --- | --- | --- |
| [**name**](http://localhost/phpmyadmin/index.php?route=/sql&db=Varsity&table=instructor&sql_query=SELECT+name%2C+course_id%0D%0AFROM+instructor%2C+teaches%0D%0AWHERE+instructor.ID+%3D+teaches.ID++%0AORDER+BY+%60instructor%60.%60name%60+ASC&sql_signature=527412690c5e91122a48742081c4bb72a8af2e1fd598022ed6c1498161b54050&session_max_rows=25&is_browse_distinct=0) | [**course\_id**](http://localhost/phpmyadmin/index.php?route=/sql&db=Varsity&table=instructor&sql_query=SELECT+name%2C+course_id%0D%0AFROM+instructor%2C+teaches%0D%0AWHERE+instructor.ID+%3D+teaches.ID++%0AORDER+BY+%60teaches%60.%60course_id%60+ASC&sql_signature=e5d9d0ac60273ec6a7b21e7aad89c9871a0a281598f6672e77afbefacfac1898&session_max_rows=25&is_browse_distinct=0) |  |
| Lembr | 200 |
| Lembr | 843 |
| Bawa | 457 |
| Wieland | 545 |
| Wieland | 581 |
| Wieland | 591 |
| DAgostino | 338 |
| DAgostino | 338 |
| DAgostino | 352 |
| DAgostino | 400 |
| DAgostino | 400 |
| DAgostino | 482 |
| DAgostino | 599 |
| DAgostino | 642 |
| DAgostino | 663 |
| DAgostino | 867 |
| DAgostino | 962 |
| DAgostino | 972 |
| DAgostino | 991 |
| Liley | 192 |
| Kean | 366 |
| Kean | 808 |
| Atanassov | 603 |
| Atanassov | 604 |
| Gustafsson | 169 |

9. If we wished to ﬁnd only instructor names and course identiﬁers for instructors in the Computer Science department, we could add an extra predicate to the where clause.

[SELECT](http://localhost/phpmyadmin/url.php?url=https://dev.mysql.com/doc/refman/8.0/en/select.html) name, course\_id FROM instructor, teaches WHERE instructor.ID = teaches.ID [and](http://localhost/phpmyadmin/url.php?url=https://dev.mysql.com/doc/refman/8.0/en/logical-operators.html%23operator_and) dept\_name = 'Comp. Sci.';

|  |  |  |
| --- | --- | --- |
| [**name**](http://localhost/phpmyadmin/index.php?route=/sql&db=Varsity&table=instructor&sql_query=SELECT+name%2C+course_id%0D%0AFROM+instructor%2C+teaches%0D%0AWHERE+instructor.ID+%3D+teaches.ID+and+dept_name+%3D+%27Comp.+Sci.%27++%0AORDER+BY+%60instructor%60.%60name%60+ASC&sql_signature=183f57d3aae242588fc39fc96d2dccac0f7ba29fdb4ef68e66d0ce6f4c5ea1fa&session_max_rows=25&is_browse_distinct=0) | [**course\_id**](http://localhost/phpmyadmin/index.php?route=/sql&db=Varsity&table=instructor&sql_query=SELECT+name%2C+course_id%0D%0AFROM+instructor%2C+teaches%0D%0AWHERE+instructor.ID+%3D+teaches.ID+and+dept_name+%3D+%27Comp.+Sci.%27++%0AORDER+BY+%60teaches%60.%60course_id%60+ASC&sql_signature=b97bd09c321ea1250456c0b119603f3d58a4c41a62afef01286b64144b224b8d&session_max_rows=25&is_browse_distinct=0) |  |
| Bourrier | 949 |
| Bourrier | 960 |
| Bondi | 274 |
| Bondi | 571 |
| Bondi | 747 |

10. For all instructors in the university who have taught some course, ﬁnd their names and the course ID of all courses they taught.

[SELECT](http://localhost/phpmyadmin/url.php?url=https://dev.mysql.com/doc/refman/8.0/en/select.html) T.name, S.course\_id FROM instructor as T, teaches as S WHERE T.ID= S.ID;

|  |  |  |
| --- | --- | --- |
| [**name**](http://localhost/phpmyadmin/index.php?route=/sql&db=Varsity&table=instructor&sql_query=SELECT+T.name%2C+S.course_id%0D%0AFROM+instructor+as+T%2C+teaches+as+S%0D%0AWHERE+T.ID%3D+S.ID++%0AORDER+BY+%60T%60.%60name%60+ASC&sql_signature=030bb78518bed6c32c61ae03ef9e09837bb64f9798db273db5235918a93ef0a2&session_max_rows=25&is_browse_distinct=0) | [**course\_id**](http://localhost/phpmyadmin/index.php?route=/sql&db=Varsity&table=instructor&sql_query=SELECT+T.name%2C+S.course_id%0D%0AFROM+instructor+as+T%2C+teaches+as+S%0D%0AWHERE+T.ID%3D+S.ID++%0AORDER+BY+%60S%60.%60course_id%60+ASC&sql_signature=6f31fb81c22d57363caed2ebd5dfea10c7694651640bf27100fb9fa87ad98f79&session_max_rows=25&is_browse_distinct=0) |  |
| Lembr | 200 |
| Lembr | 843 |
| Bawa | 457 |
| Wieland | 545 |
| Wieland | 581 |
| Wieland | 591 |
| DAgostino | 338 |
| DAgostino | 338 |
| DAgostino | 352 |
| DAgostino | 400 |
| DAgostino | 400 |
| DAgostino | 482 |
| DAgostino | 599 |
| DAgostino | 642 |
| DAgostino | 663 |
| DAgostino | 867 |
| DAgostino | 962 |
| DAgostino | 972 |
| DAgostino | 991 |
| Liley | 192 |
| Kean | 366 |
| Kean | 808 |
| Atanassov | 603 |
| Atanassov | 604 |
| Gustafsson | 169 |

DAY - 04

1.Find the names of all instructors whose salary is greater than at least one instructor in the Biology department.

[SELECT](http://localhost/phpmyadmin/url.php?url=https://dev.mysql.com/doc/refman/8.0/en/select.html) DISTINCT T.name FROM instructor as T, instructoras S WHERE T.salary > S.salary [and](http://localhost/phpmyadmin/url.php?url=https://dev.mysql.com/doc/refman/8.0/en/logical-operators.html%23operator_and) S.dept\_name = 'Biology';

name

Bawa

Yazdi

Wieland

DAgostino

Liley

Atanassov

Moreira

Gustafsson

Bourrier

Bondi

Soisalon-Soininen

Arias

Murata

Tung

Luo

Romero

Lent

Sarkar

Shuming

Bancilhon

Dusserre

Desyl

Jaekel

McKinnon

Mingoz

2.Find the names of all departments whose building name includes the substring 'Taylor'.

[SELECT](http://localhost/phpmyadmin/url.php?url=https://dev.mysql.com/doc/refman/8.0/en/select.html) dept\_name FROM department WHERE building [LIKE](http://localhost/phpmyadmin/url.php?url=https://dev.mysql.com/doc/refman/8.0/en/string-comparison-functions.html%23operator_like) '%Taylor%';

dept\_name

Astronomy

History

Statistics

3.To denote “all attributes.

[SELECT](http://localhost/phpmyadmin/url.php?url=https://dev.mysql.com/doc/refman/8.0/en/select.html) instructor.\* FROM instructor, teaches WHERE instructor.ID = teaches.ID;

ID name dept\_name salary

14365 Lembr Accounting 32241.56

14365 Lembr Accounting 32241.56

15347 Bawa Athletics 72140.88

19368 Wieland Pol. Sci. 124651.41

19368 Wieland Pol. Sci. 124651.41

19368 Wieland Pol. Sci. 124651.41

22591 DAgostino Psychology 59706.49

22591 DAgostino Psychology 59706.49

22591 DAgostino Psychology 59706.49

22591 DAgostino Psychology 59706.49

22591 DAgostino Psychology 59706.49

22591 DAgostino Psychology 59706.49

22591 DAgostino Psychology 59706.49

22591 DAgostino Psychology 59706.49

22591 DAgostino Psychology 59706.49

22591 DAgostino Psychology 59706.49

22591 DAgostino Psychology 59706.49

22591 DAgostino Psychology 59706.49

22591 DAgostino Psychology 59706.49

25946 Liley Languages 90891.69

28097 Kean English 35023.18

28097 Kean English 35023.18

28400 Atanassov Statistics 84982.92

28400 Atanassov Statistics 84982.92

3199 Gustafsson Elec. Eng. 82534.37

4. Order By clause.

[SELECT](http://localhost/phpmyadmin/url.php?url=https://dev.mysql.com/doc/refman/8.0/en/select.html) name FROM instructor WHERE dept\_name = 'Physics' ORDER BY name;

name

Shuming

Voronina

5. To specify the sort order, we may specify desc for descending order or asc for ascending order.

[SELECT](http://localhost/phpmyadmin/url.php?url=https://dev.mysql.com/doc/refman/8.0/en/select.html) \* FROM instructor ORDER by salary DESC, name ASC;

ID name dept\_name salary

19368 Wieland Pol. Sci. 124651.41

74420 Voronina Physics 121141.99

96895 Mird Marketing 119921.41

95709 Sakurai English 118143.98

90376 Bietzk Cybernetics 117836.50

34175 Bondi Comp. Sci. 115469.11

50330 Shuming Physics 108011.81

48507 Lent Mech. Eng. 107978.47

74426 Kenje Marketing 106554.73

6569 Mingoz Finance 105311.38

37687 Arias Statistics 104563.38

63287 Jaekel Athletics 103146.87

77346 Mahmoud Geology 99382.59

16807 Yazdi Athletics 98333.65

63395 McKinnon Cybernetics 94333.99

99052 Dale Cybernetics 93348.83

25946 Liley Languages 90891.69

73623 Sullivan Elec. Eng. 90038.09

79653 Levine Elec. Eng. 89805.83

4233 Luo English 88791.45

52647 Bancilhon Pol. Sci. 87958.01

48570 Sarkar Pol. Sci. 87549.80

28400 Atanassov Statistics 84982.92

3199 Gustafsson Elec. Eng. 82534.37

3335 Bourrier Comp. Sci. 80797.83

6. If we wish to ﬁnd the names of instructors with salary amounts between $90,000 and $100,000.

[SELECT](http://localhost/phpmyadmin/url.php?url=https://dev.mysql.com/doc/refman/8.0/en/select.html) name FROM instructor WHERE salary BETWEEN 90000 [AND](http://localhost/phpmyadmin/url.php?url=https://dev.mysql.com/doc/refman/8.0/en/logical-operators.html%23operator_and) 100000;

name

Yazdi

Liley

McKinnon

Sullivan

Mahmoud

Dale

## Set Operationss

7. To ﬁnd the set of all courses taught either in Fall 2002 or in Spring 2004.

(([SELECT](http://localhost/phpmyadmin/url.php?url=https://dev.mysql.com/doc/refman/8.0/en/select.html) course\_id FROM section WHERE semester = 'Fall' [and](http://localhost/phpmyadmin/url.php?url=https://dev.mysql.com/doc/refman/8.0/en/logical-operators.html%23operator_and) year = '2002') UNION ALL ([SELECT](http://localhost/phpmyadmin/url.php?url=https://dev.mysql.com/doc/refman/8.0/en/select.html) course\_id FROM section WHERE semester = 'Spring' [and](http://localhost/phpmyadmin/url.php?url=https://dev.mysql.com/doc/refman/8.0/en/logical-operators.html%23operator_and) year = '2004'));

course\_id

105

169

192

200

274

461

559

694

927

571

747

760

795

8. To ﬁnd the set of all courses taught in both the Fall 2002 and Spring 2004.

INTERSECT

9.To ﬁnd all courses taught in the Fall 2017 semester but not in the Spring 2018 semester.

([SELECT](http://localhost/phpmyadmin/url.php?url=https://dev.mysql.com/doc/refman/8.0/en/select.html) course\_id FROM section WHERE semester = 'Fall' [and](http://localhost/phpmyadmin/url.php?url=https://dev.mysql.com/doc/refman/8.0/en/logical-operators.html%23operator_and) year= 2007) EXCEPT ([SELECT](http://localhost/phpmyadmin/url.php?url=https://dev.mysql.com/doc/refman/8.0/en/select.html) course\_id FROM section WHERE semester = 'Spring' [and](http://localhost/phpmyadmin/url.php?url=https://dev.mysql.com/doc/refman/8.0/en/logical-operators.html%23operator_and) year= 2008);

course\_id

258

468

489

612

893

949

10. NULL clause

[SELECT](http://localhost/phpmyadmin/url.php?url=https://dev.mysql.com/doc/refman/8.0/en/select.html) salary FROM instructor WHERE salary [IS](http://localhost/phpmyadmin/url.php?url=https://dev.mysql.com/doc/refman/8.0/en/comparison-operators.html%23operator_is) [NOT](http://localhost/phpmyadmin/url.php?url=https://dev.mysql.com/doc/refman/8.0/en/logical-operators.html%23operator_not) NULL;

salary

32241.56

72140.88

98333.65

124651.41

59706.49

90891.69

35023.18

84982.92

71351.42

82534.37

80797.83

115469.11

62579.61

43770.36

104563.38

61387.56

50482.03

88791.45

34272.67

79070.08

107978.47

87549.80

108011.81

32570.50

87958.01

10. Using the clauses is unknown and is not unknown.

[SELECT](http://localhost/phpmyadmin/url.php?url=https://dev.mysql.com/doc/refman/8.0/en/select.html) salary FROM instructor WHERE salary > 10000 [IS](http://localhost/phpmyadmin/url.php?url=https://dev.mysql.com/doc/refman/8.0/en/comparison-operators.html%23operator_is) [NOT](http://localhost/phpmyadmin/url.php?url=https://dev.mysql.com/doc/refman/8.0/en/logical-operators.html%23operator_not) UNKNOWN;

salary

32241.56

72140.88

98333.65

124651.41

59706.49

90891.69

35023.18

84982.92

71351.42

82534.37

80797.83

115469.11

62579.61

43770.36

104563.38

61387.56

50482.03

88791.45

34272.67

79070.08

107978.47

87549.80

108011.81

32570.50

87958.01

DAY - 05

1.Find the average salary of instructors in the Computer Science department.

[SELECT](http://localhost/phpmyadmin/url.php?url=https://dev.mysql.com/doc/refman/8.0/en/select.html) [AVG](http://localhost/phpmyadmin/url.php?url=https://dev.mysql.com/doc/refman/8.0/en/aggregate-functions.html%23function_avg)(salary) FROM instructor WHERE dept\_name = 'Comp. Sci.';

98133.470000

2. To ﬁnd the set of all courses taught in both the Fall 2017 and Spring 2018.

([SELECT](http://localhost/phpmyadmin/url.php?url=https://dev.mysql.com/doc/refman/8.0/en/select.html) course\_id FROM section WHERE semester = 'Fall' [and](http://localhost/phpmyadmin/url.php?url=https://dev.mysql.com/doc/refman/8.0/en/logical-operators.html%23operator_and) year= 2002) INTERSECT ([SELECT](http://localhost/phpmyadmin/url.php?url=https://dev.mysql.com/doc/refman/8.0/en/select.html) course\_id FROM section WHERE semester = 'Spring' [and](http://localhost/phpmyadmin/url.php?url=https://dev.mysql.com/doc/refman/8.0/en/logical-operators.html%23operator_and) year= 2007);

course\_id

169

200

3. To ﬁnd all courses taught in the Fall 2017 semester but not in the Spring 2018 semester.

([SELECT](http://localhost/phpmyadmin/url.php?url=https://dev.mysql.com/doc/refman/8.0/en/select.html) course\_id FROM section WHERE semester = 'Fall' [and](http://localhost/phpmyadmin/url.php?url=https://dev.mysql.com/doc/refman/8.0/en/logical-operators.html%23operator_and) year= 2002) EXCEPT ([SELECT](http://localhost/phpmyadmin/url.php?url=https://dev.mysql.com/doc/refman/8.0/en/select.html) course\_id FROM section WHERE semester = 'Spring' [and](http://localhost/phpmyadmin/url.php?url=https://dev.mysql.com/doc/refman/8.0/en/logical-operators.html%23operator_and) year= 2007);

course\_id

105

192

274

461

559

694

927

4. Find the total number of instructors who teach a course in the Spring 2018 semester.

[SELECT](http://localhost/phpmyadmin/url.php?url=https://dev.mysql.com/doc/refman/8.0/en/select.html) [COUNT](http://localhost/phpmyadmin/url.php?url=https://dev.mysql.com/doc/refman/8.0/en/aggregate-functions.html%23function_count)(DISTINCT ID) FROM teaches WHERE semester ='Spring' [AND](http://localhost/phpmyadmin/url.php?url=https://dev.mysql.com/doc/refman/8.0/en/logical-operators.html%23operator_and) year = 2008;

6. Find the number of instructors in each department who teach a course in the Spring 2018 semester.

[SELECT](http://localhost/phpmyadmin/url.php?url=https://dev.mysql.com/doc/refman/8.0/en/select.html) dept\_name, [COUNT](http://localhost/phpmyadmin/url.php?url=https://dev.mysql.com/doc/refman/8.0/en/aggregate-functions.html%23function_count)(DISTINCT instructor.ID) AS inst\_count FROM instructor,teaches WHERE instructor.ID = teaches.ID [and](http://localhost/phpmyadmin/url.php?url=https://dev.mysql.com/doc/refman/8.0/en/logical-operators.html%23operator_and) semester = 'Spring' [and](http://localhost/phpmyadmin/url.php?url=https://dev.mysql.com/doc/refman/8.0/en/logical-operators.html%23operator_and) year = 2007 GROUP BY dept\_name;

5. Find the average salary in each department.

[SELECT](http://localhost/phpmyadmin/url.php?url=https://dev.mysql.com/doc/refman/8.0/en/select.html) dept\_name, [AVG](http://localhost/phpmyadmin/url.php?url=https://dev.mysql.com/doc/refman/8.0/en/aggregate-functions.html%23function_avg) (salary) AS avg\_salary FROM instructor GROUP BY dept\_name;

dept\_name avg\_salary

Accounting 48716.592500

Astronomy 79070.080000

Athletics 77098.198000

Biology 61287.250000

Comp. Sci. 98133.470000

Cybernetics 96346.567500

Elec. Eng. 74162.740000

English 72089.050000

Finance 105311.380000

Geology 99382.590000

Languages 57421.856667

Marketing 84097.437500

Mech. Eng. 79813.020000

Physics 114576.900000

Pol. Sci. 100053.073333

Psychology 61143.050000

Statistics 67795.441667

6. Find the number of instructors in each department who teach a course in the Spring 2018 semester.

7. Find the avarage salary of instructors in each department who teach a course in the Spring 2018 semester.

[SELECT](http://localhost/phpmyadmin/url.php?url=https://dev.mysql.com/doc/refman/8.0/en/select.html) dept\_name, [AVG](http://localhost/phpmyadmin/url.php?url=https://dev.mysql.com/doc/refman/8.0/en/aggregate-functions.html%23function_avg)(salary) AS avg\_salary FROM instructor GROUP BY dept\_name HAVING [AVG](http://localhost/phpmyadmin/url.php?url=https://dev.mysql.com/doc/refman/8.0/en/aggregate-functions.html%23function_avg)(salary) > 42000;

dept\_name avg\_salary

Accounting 48716.592500

Astronomy 79070.080000

Athletics 77098.198000

Biology 61287.250000

Comp. Sci. 98133.470000

Cybernetics 96346.567500

Elec. Eng. 74162.740000

English 72089.050000

Finance 105311.380000

Geology 99382.590000

Languages 57421.856667

Marketing 84097.437500

Mech. Eng. 79813.020000

Physics 114576.900000

Pol. Sci. 100053.073333

Psychology 61143.050000

Statistics 67795.441667

8. For each course section oﬀered in 2017, ﬁnd the average total credits (tot cred) of all students enrolled in the section, if the section has at least 2 students.

9. Assume that some tuples in the instructor relation have a null value for salary.

[SELECT](http://localhost/phpmyadmin/url.php?url=https://dev.mysql.com/doc/refman/8.0/en/select.html) [SUM](http://localhost/phpmyadmin/url.php?url=https://dev.mysql.com/doc/refman/8.0/en/aggregate-functions.html%23function_sum)(salary) FROM instructor;

3880009.41