**DAY 1 SOLUTIONS**

**# ProblemSet00 – Questions and solutions**

**select \* from dept;**

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

| DEP\_ID | DEP\_NAME | DEP\_MANAGER |

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

| D01 | HEALTH | TIM ARCHER |

| D02 | COMMUNICATIONS | ADAM JUSTIN |

| D03 | PRODUCT | BRUCE WILLS |

| D04 | INSURANCE | ROBERT SWIFT |

| D05 | FINANCE | NATASHA STEVENS |

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

5 rows in set (0.14 sec)

**select \* from employee;**

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

| E\_ID | NAME | DEP\_ID | SALARY | MANAGER\_ID |

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

| A111 | JOHN HELLEN | D01 | 15380 | A120 |

| A114 | MARTIN TREDEAU | D01 | 54497 | A120 |

| A116 | ROBIN WAYNE | D02 | 20196 | A187 |

| A120 | TIM ARCHER | D01 | 48834 | A298 |

| A121 | STUART WILLIAM | D02 | 78629 | A187 |

| A128 | ADAM WAYNE | D05 | 94324 | A165 |

| A129 | JOSEPH ANGELIN | D05 | 44280 | A165 |

| A130 | VANESSA PARY | D04 | 28565 | A188 |

| A132 | PAUL VINCENT | D01 | 94791 | A120 |

| A133 | STEVE MICHELOS | D02 | 61215 | A187 |

| A142 | TARA CUMMINGS | D04 | 99475 | A188 |

| A143 | BRAD MICHAEL | D01 | 24488 | A120 |

| A156 | NICK MARTIN | D03 | 50174 | A178 |

| A165 | NATASHA STEVENS | D05 | 31377 | A298 |

| A176 | EDWARD CANE | D01 | 89176 | A120 |

| A178 | BRUCE WILLS | D03 | 66861 | A298 |

| A187 | ADAM JUSTIN | D02 | 80543 | A298 |

| A188 | ROBERT SWIFT | D04 | 27700 | A298 |

| A194 | HAROLLD STEVENS | D02 | 32166 | A187 |

| A198 | TOM HANKS | D02 | 16879 | A187 |

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

20 rows in set (0.00 sec)

**1)Select the Employee with the top three salaries**

|  |  |
| --- | --- |
| **QUERY** | select \* from employee where salary in (select distinct(salary) from employee order by salary desc limit 3); |
| **ANS** | +------+-------------+--------+--------+------------+  | E\_ID | NAME | DEP\_ID | SALARY | MANAGER\_ID |  +------+-------------+--------+--------+------------+  | A132 |PAUL VINCENT | D01 | 94791 | A120 |  | A142 |TARA CUMMINGS | D04 | 99475 | A188 |  | A128 |ADAM WAYNE | D05 | 94324 | A165 |  +------+-------------+--------+--------+------------+  1 row in set (0.00 sec) |

**2)Select the Employee with the least salary**

|  |  |
| --- | --- |
| **QUERY** | select \* from employee where salary = (select min(salary) from employee); |
| **ANS** | +------+-------------+--------+--------+------------+  | E\_ID | NAME | DEP\_ID | SALARY | MANAGER\_ID |  +------+-------------+--------+--------+------------+  | A111 | JOHN HELLEN | D01 | 15380 | A120 |  +------+-------------+--------+--------+------------+  1 row in set (0.00 sec) |

**3)Select the Employee who does not have a manager in the department table**

|  |  |
| --- | --- |
| **QUERY** | Select \* from employee where manager\_id not in (select e\_id from employee e join dept d on e.name=d.dep\_manager); |
| **ANS** | +------+-----------------+--------+--------+------------+  | E\_ID | NAME | DEP\_ID | SALARY | MANAGER\_ID |  +------+-----------------+--------+--------+------------+  | A120 | TIM ARCHER | D01 | 48834 | A298 |  | A165 | NATASHA STEVENS | D05 | 31377 | A298 |  | A178 | BRUCE WILLS | D03 | 66861 | A298 |  | A187 | ADAM JUSTIN | D02 | 80543 | A298 |  | A188 | ROBERT SWIFT | D04 | 27700 | A298 |  +------+-----------------+--------+--------+------------+  5 rows in set (0.00 sec) |

**4)Select the Employee who is also a Manager**

|  |  |
| --- | --- |
| **QUERY** | Select \* from employee where e\_id in  (select e\_id from employee e join dept d on e.name=d.dep\_manager); |
| **ANS** | +------+-----------------+--------+--------+------------+  | E\_ID | NAME | DEP\_ID | SALARY | MANAGER\_ID |  +------+-----------------+--------+--------+------------+  | A120 | TIM ARCHER | D01 | 48834 | A298 |  | A165 | NATASHA STEVENS | D05 | 31377 | A298 |  | A178 | BRUCE WILLS | D03 | 66861 | A298 |  | A187 | ADAM JUSTIN | D02 | 80543 | A298 |  | A188 | ROBERT SWIFT | D04 | 27700 | A298 |  +------+-----------------+--------+--------+------------+  5 rows in set (0.00 sec) |

**5)Select the Empolyee who is a Manager and has least salary**

|  |  |
| --- | --- |
| **QUERY** | select \* from employee where salary=(select min(salary) from employee where e\_id in  (select distinct(manager\_id) from employee)); |
| **ANS** | +------+--------------+--------+--------+------------+  | E\_ID | NAME | DEP\_ID | SALARY | MANAGER\_ID |  +------+--------------+--------+--------+------------+  | A188 | ROBERT SWIFT | D04 | 27700 | A298 |  +------+--------------+--------+--------+------------+  1 row in set (0.09 sec) |

**6)Select the total number of Employees in Communications departments**

|  |  |
| --- | --- |
| **QUERY** | select count(\*) as totalemployee from employee where dep\_id=  (select dep\_id from dept where dep\_name='COMMUNICATIONS'); |
| **ANS** | +---------------+  | totalemployee |  +---------------+  | 6 |  +---------------+  1 row in set (0.03 sec) |

**7)Select the Employee in Finance Department who has the top salary**

|  |  |
| --- | --- |
| **QUERY** | select \* from employee where (dep\_id,salary)=  (select d.dep\_id,max(salary) from employee e join dept d on e.dep\_id=d.dep\_id where d.dep\_name='FINANCE'); |
| **ANS** | +------+------------+--------+--------+------------+  | E\_ID | NAME | DEP\_ID | SALARY | MANAGER\_ID |  +------+------------+--------+--------+------------+  | A128 | ADAM WAYNE | D05 | 94324 | A165 |  +------+------------+--------+--------+------------+  1 row in set (0.00 sec) |

**8)Select the Employee in product depatment who has the least salary**

|  |  |
| --- | --- |
| **QUERY** | select \* from employee where(dep\_id,salary)=  (select d.dep\_id,min(salary) from employee e join dept d on e.dep\_id=d.dep\_id where d.dep\_name='PRODUCT'); |
| **ANS** | +------+-------------+--------+--------+------------+  | E\_ID | NAME | DEP\_ID | SALARY | MANAGER\_ID |  +------+-------------+--------+--------+------------+  | A156 | NICK MARTIN | D03 | 50174 | A178 |  +------+-------------+--------+--------+------------+  1 row in set (0.06 sec) |

**9)Select the count of Empolyees in Health with maximum salary**

|  |  |
| --- | --- |
| **QUERY** | select count(\*) as employeecount from employee where (salary,dep\_id)= (select max(salary),d.dep\_id from employee e join dept d on e.dep\_id=d.dep\_id where dep\_name='HEALTH'); |
| **ANS** | +---------------+  | employeecount |  +---------------+  | 1 |  +---------------+  1 row in set (0.05 sec) |

|  |  |
| --- | --- |
| **QUERY** | select count(\*) as employeecount from employee e join dept d on e.dep\_id=d.dep\_id where salary= (select max(salary) from employee) and d.dep\_name='HEALTH'; |
| **ANS** | +---------------+  | employeecount |  +---------------+  | 0 |  +---------------+  1 row in set (0.05 sec) |

**10)Select the Employees who report to Natasha Stevens**

|  |  |
| --- | --- |
| **QUERY** | select ee.e\_id,ee.name,ee.dep\_id,ee.salary,ee.manager\_id from employee e join employee ee on e.e\_id=ee.manager\_id where e.name='NATASHA STEVENS'; |
| **ANS** | +------+----------------+--------+--------+------------+  | e\_id | name | dep\_id | salary | manager\_id |  +------+----------------+--------+--------+------------+  | A128 | ADAM WAYNE | D05 | 94324 | A165 |  | A129 | JOSEPH ANGELIN | D05 | 44280 | A165 |  +------+----------------+--------+--------+------------+  2 rows in set (0.00 sec) |

**11)Display the Employee name,Employee count,Dep name,Dept manager in the Health department**

|  |  |
| --- | --- |
| **QUERY** | select GROUP\_CONCAT(name) as name,count(\*),dep\_name,dep\_Manager from employee e join dept d on e.dep\_id=d.dep\_id where d.dep\_name='HEALTH'; |
| **ANS** | +-----------------------------------------------------------------------------+----------+----------+-------------+  | name | count(\*) | dep\_name | dep\_Manager |  +-----------------------------------------------------------------------------+----------+----------+-------------+  | JOHN HELLEN,MARTIN TREDEAU,TIM ARCHER,PAUL VINCENT,BRAD MICHAEL,EDWARD CANE | 6 | HEALTH | TIM ARCHER |  +-----------------------------------------------------------------------------+----------+----------+-------------+  1 row in set (0.01 sec) |

**12)Display the Department id,Employee ids and Manager ids for the Communications department**

|  |  |
| --- | --- |
| **QUERY** | select d.dep\_id,e\_id,manager\_id from employee e join dept d on e.dep\_id=d.dep\_id where dep\_name='COMMUNICATIONS'; |
| **ANS** | +--------+------+------------+  | dep\_id | e\_id | manager\_id |  +--------+------+------------+  | D02 | A116 | A187 |  | D02 | A121 | A187 |  | D02 | A133 | A187 |  | D02 | A187 | A298 |  | D02 | A194 | A187 |  | D02 | A198 | A187 |  +--------+------+------------+  6 rows in set (0.20 sec) |

**13)Select the Average Expenses for Each dept with Dept id and Dept name**

|  |  |
| --- | --- |
| **QUERY** | select format(avg(salary),2) as averageexpenses,d.dep\_id,dep\_name from employee e join dept d on e.dep\_id=d.dep\_id group by d.dep\_id; |
| **ANS** | +-----------------+--------+----------------+  | averageexpenses | dep\_id | dep\_name |  +-----------------+--------+----------------+  | 54,527.67 | D01 | HEALTH |  | 48,271.33 | D02 | COMMUNICATIONS |  | 56,660.33 | D05 | FINANCE |  | 51,913.33 | D04 | INSURANCE |  | 58,517.50 | D03 | PRODUCT |  +-----------------+--------+----------------+  6 rows in set (0.02 sec) |

**14)Select the total expense for the department finance**

|  |  |
| --- | --- |
| **QUERY** | select sum(salary) as totalexpenses from employee e join dept d on e.dep\_id=d.dep\_id where dep\_name='FINANCE'; |
| **ANS** | +---------------+  | totalexpenses |  +---------------+  | 169981 |  +---------------+  1 row in set (0.26 sec) |

**15)Select the department which spends the least with Dept id and Dept manager name**

|  |  |
| --- | --- |
| **QUERY** | select e.dep\_id,dep\_manager from employee e join dept d on e.dep\_id=d.dep\_id group by e.dep\_id having sum(salary)=  (select sum(salary) from employee group by dep\_id order by sum(salary) limit 1); |
| **ANS** | +--------+-------------+  | dep\_id | dep\_manager |  +--------+-------------+  | D03 | BRUCE WILLS |  +--------+-------------+  1 row in set (0.00 sec) |

**16)Select the count of Employees in each department**

|  |  |
| --- | --- |
| **QUERY** | select dep\_id,count(\*) as employeecount from employee group by dep\_id; |
| **ANS** | +--------+---------------+  | dep\_id | employeecount |  +--------+---------------+  | D01 | 6 |  | D02 | 6 |  | D05 | 3 |  | D04 | 3 |  | D03 | 2 |  +--------+---------------+  5 rows in set (0.00 sec) |

**17)Select the count of Employees in each department having salary <10000**

|  |  |
| --- | --- |
| **QUERY** | select dep\_id,count(\*) as count from employee where salary<10000 group by dep\_id ; |
| **ANS** | Empty set (0.00 sec) |

|  |  |
| --- | --- |
| **QUERY** | select dep\_id,count(\*) as count from employee where salary<30000 group by dep\_id ; |
| **ANS** | +--------+----------+  | dep\_id | count(\*) |  +--------+----------+  | D01 | 2 |  | D02 | 2 |  | D04 | 2 |  +--------+----------+  3 rows in set (0.00 sec) |

**18)Select the total number of Employees in Dept id D04**

|  |  |
| --- | --- |
| **QUERY** | select dep\_id,count(\*) as count from employee where dep\_id='D04' group by dep\_id; |
| **ANS** | +--------+-------+  | dep\_id | count |  +--------+-------+  | D04 | 3 |  +--------+-------+  1 row in set (0.00 sec) |

**19)Select all department details of the Department with Maximum Employees**

|  |  |
| --- | --- |
| **QUERY** | select e.dep\_id,dep\_name,dep\_manager,count(\*) as employeecount from employee e join dept d on e.dep\_id=d.dep\_id group by dep\_id having count(\*)=(select count(\*) from employee group by dep\_id order by count(\*) desc limit 1); |
| **ANS** | +--------+----------------+-------------+---------------+  | dep\_id | dep\_name | dep\_manager | employeecount |  +--------+----------------+-------------+---------------+  | D01 | HEALTH | TIM ARCHER | 6 |  | D02 | COMMUNICATIONS | ADAM JUSTIN | 6 |  +--------+----------------+-------------+---------------+  2 rows in set (0.00 sec) |

**20)Select the Employees who has Tim Cook as their manager**

|  |  |
| --- | --- |
| **QUERY** | select \* from employee where manager\_id=(select e\_id from employee where name='TIM COOK'); |
| **ANS** | Empty set (0.00 sec) |