Homework #3

Using SQL, solve the following queries based on the projects, employees, workson, and rate tables discussed in the class (shown below). Note that the tables contain sample records only and do not represent all the possible records that could be stored in these tables.

projects

PROJECT_NUMBER	PROJECT_NAME	PROJECT_CITY
1	Eagle	NY
2	Super Jet	LA

workon

PROJECT_NUMBER	EMP_ID
1	10
1	11
2	10
2	20
2	11

employees

EMP_ID	EMP_NAME	RATE_CATEGORY	EMP_CITY
10	Smith	B	NY
11	eSmith	C	SF
20	Smithe	C	LA
15	eSmithe	D	SD

rate

RATE_CATEGORY	RATE
A	100
B	80
C	60
D	50

1. Using set operations, find the employee ID's of those employees who are not working on any projects.
    Code/Output:

```
71  /*Q1*/
72  select emp_id
73  from employees
74  minus
75  select emp_id
76  from workon;
77
```

EMP_ID
15

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2. Using set operations and sub-query, find the names of those employees who are not working on any projects.
   Code/Output:

```
78  /*Q2*/
79  select emp_name
80  from employees
81  where emp_id in
82      (select emp_id
83      from employees
84      minus
85      select emp_id
86      from workon);
87
```

EMP_NAME
eSmithe

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3. Using set operations, find the names of employees who work on both the Eagle and Super Jet projects.
   Code/Output:

```
88   /*Q3*/
89   select emp_name
90   from employees
91   where emp_id in
92       (select emp_id
93       from workon
94       where project_number in
95           (select project_number
96           from projects
97           intersect
98           select project_number
99           from workon)
100  having count(*)>1
101  group by emp_id)
102
```

EMP_NAME
eSmith
Smith

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2 rows selected.

4. Using set operations, find the names of employees who work on either the Eagle or the Super Jet projects.
    Code/Output:

```
103  /*Q4*/
104  select emp_name
105  from employees
106  where emp_id in
107      (select emp_id
108      from employees
109      intersect
110      select emp_id
111      from workon)
112
```

EMP_NAME
Smith
eSmith
Smithe

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3 rows selected.

5. Using non-correlated sub-query, find the names of employees who work on both the Eagle and Super Jet projects.
    Code/Output:

```
86  /*Q5*/
87  select emp_name
88  from employees
89  where emp_id in
90      (select emp_id
91      from workon
92      group by emp_id
93      having count(*)>1);
```

EMP_NAME
Smith
eSmith

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2 rows selected.

6. Using correlated sub-query, find the names of employees who work on both the Eagle and
    Super Jet projects.
    Code/Output:

```
95   /*Q6*/
96   select emp_name
97   from employees e
98   where exists
99       (select emp_id
100      from workon w
101      where w.emp_id=e.emp_id
102      group by emp_id
103      having count(*)>1);
104
```

EMP_NAME
Smith
eSmith

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2 rows selected.

7. Using sub-query, find the names of employees who work on both the Eagle and Super Jet
    projects and have a rate greater or equal to 80.
    Code/Output:

```
105   /*Q7*/
106   select emp_name
107   from employees e, rate r
108   where e.rate_category=r.rate_category
109   and r.rate>=80
110   and emp_id in
111       (select emp_id
112       from workon
113       group by emp_id
114       having count(*)>1);
```

EMP_NAME
Smith

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