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a) **Return names of every employee who works in the "Hardware", "Software", and "Research" departments**

SELECT emp.ename FROM emp WHERE emp.eid IN(
SELECT works.eid
FROM works
WHERE works.did = (SELECT dept.did FROM dept WHERE dept.dname = 'Hardware')
INTERSECT
(SELECT works.eid
FROM works
WHERE works.did = (SELECT dept.did FROM dept WHERE dept.dname = 'Software'))
INTERSECT
(SELECT works.eid
FROM works
WHERE works.did = (SELECT dept.did FROM dept WHERE dept.dname = 'Research')));

b) **Return the names of every department without any employee**

SELECT dept.dname FROM dept WHERE dept.did NOT IN (
SELECT DISTINCT(works.did) FROM works);

c) **Print the managerid of managers who manage only departments with budgets greater than $1.5 million.**

SELECT managerid FROM dept WHERE managerid NOT IN (SELECT managerid FROM dept WHERE budget <= 1500000) ;

d) **Print the name of employees whose salary is less than or equal to the salary of every employee**

SELECT e1.ename
FROM emp e1
WHERE NOT EXISTS (
SELECT *

```
FROM emp e2
WHERE e2.salary < e1.salary
);
```

e) Print the enames of managers who manage the departments with the largest budget

```
SELECT emp.ename FROM emp WHERE emp.eid IN(
SELECT works.eid FROM works WHERE works.eid IN
(SELECT dept.managerid FROM dept WHERE dept.budget >= ALL(SELECT dept.budget
FROM dept)));
```

f) Print the name of every department and the average salary of the employees of that department. The department must have a budget more than or equal to $50.

```
SELECT dept.dname, AVG(emp.salary) FROM emp
JOIN works ON emp.eid=works.eid
JOIN dept ON dept.did=works.did WHERE dept.budget>50 GROUP BY dept.did;
```

g) Print the managerids of managers who control the largest amount of total budget. As an example, if a manager manages two departments, the amount of total budget for him/her will be the sum of the budgets of the two departments. We want to find managers that have max total budget

```
SELECT d.managerid
FROM dept d
JOIN dept d1 ON d.managerid = d1.managerid
GROUP BY d.managerid
ORDER BY SUM(d.budget) DESC
LIMIT 1;
```

h) Print the name of every employee who works only in the" Hardware" department.

```
SELECT ename FROM emp WHERE eid IN(
```

```sql
SELECT eid FROM works WHERE eid NOT IN(

SELECT eid FROM works WHERE did IN(

SELECT did FROM dept WHERE dname <>'hardware')));
```