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Assignment 1

A.

```
SELECT D.did,D.dname FROM works W,dept D
WHERE D.did = W.did AND W.pct_time = 50;
```

B.

```
SELECT ename FROM emp
JOIN works ON emp.eid = works.eid
JOIN dept ON works.did = dept.did
WHERE dname IN ("Hardware", "Software", "Research")
GROUP BY ename HAVING COUNT(*) = 3;
```

C.

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

D.

```
SELECT managerid FROM dept GROUP BY managerid
HAVING (MIN(budget) > 1500000);
```

E.

```
SELECT ename FROM emp
WHERE salary = (SELECT MIN(salary) FROM emp);
```

F.

```
SELECT E.ename FROM dept D, emp E
WHERE D.budget = (SELECT max(D.budget) FROM dept D)
AND D.managerid = E.eid;
```

G.

```
SELECT dname, AVG(salary) FROM emp
JOIN works ON emp.eid = works.eid
```

```
JOIN dept ON works.did = dept.did  
WHERE budget > 50 OR budget = 50  
GROUP BY dname;
```

H.

```
SELECT managerid FROM (  
  SELECT managerid, SUM(budget) AS total_budget FROM dept  
  GROUP BY managerid  
) AS dept_one  
  
WHERE total_budget = (  
  SELECT MAX(total_budget) FROM (  
    SELECT managerid, SUM(budget) AS total_budget FROM dept  
    GROUP BY managerid  
  ) AS dept_two  
);
```

I.

```
SELECT DISTINCT(emp.ename)  
FROM emp, dept, works  
WHERE emp.eid = works.eid  
AND dept.did = works.did  
AND emp.salary <= (SELECT AVG(salary) FROM emp,  
  works WHERE dept.did = works.did  
  AND works.eid = emp.eid);
```

J.

```
SELECT E.ename FROM emp E,dept D, works W  
WHERE E.eid = W.eid AND D.did = W.did  
AND D.dname = 'Hardware'  
AND NOT EXISTS  
(SELECT * FROM works W1, dept D1 WHERE E.eid = W1.eid AND W1.did = D1.did AND  
D1.dname <> 'Hardware');
```