

1. Get full details of all parts that are shipped to any project in LONDON.

```
SELECT A.*, D.SNAME, C.PROJNAME, B.QUANTITY FROM PARTS A, SHIPMENT B,
PROJECT C, SUPPLIERS D
WHERE A.PNUM = B.PNUM
AND B.PROJNUM = C.PROJNUM
AND D.SNUM = B.SNUM
AND C.CITY = 'LONDON';
```

PNUM	PNAME	COLOR	WEIGHT	CITY	SNAME	PROJNAME	QUANTITY
1 P1	NUT	... RED	12	LONDON	... ADAMS	... COLLATOR	... 269
2 P3	SCREW	... BLUE	17	ROME	... ADAMS	... TAPE	... 874
3 P3	SCREW	... BLUE	17	ROME	... JONES	... COLLATOR	... 600
4 P3	SCREW	... BLUE	17	ROME	... JONES	... TAPE	... 812
5 P5	CAMERA	... BLUE	32	PARIS	... ADAMS	... COLLATOR	... 179

2. Get the supplier names for suppliers who did not ship any parts to any project in LONDON.

```
SELECT DISTINCT A.SNAME FROM SUPPLIERS A
WHERE A.SNUM NOT IN (SELECT B.SNUM FROM SHIPMENT B, PROJECT C
WHERE B.PROJNUM = C.PROJNUM
AND C.CITY = 'LONDON');
```

SNAME
1 SMITH
2 CLARK
3 BLAKE

3. Get supplier names for suppliers who shipped to the COLLATOR project.

```
SELECT DISTINCT A.SNAME FROM SUPPLIERS A, SHIPMENT B, PROJECT C
WHERE C.PROJNAME = 'COLLATOR'
AND C.PROJNUM = B.PROJNUM
AND B.SNUM = A.SNUM;
```

SNAME
1 ADAMS
2 JONES

4. Get a list of the supplier names, and the total quantities each of them shipped of each part.

```
SELECT A.SNAME, C.PNUM, C.PNAME, SUM(B.QUANTITY) FROM SUPPLIERS A,
SHIPMENT B, PARTS C
WHERE A.SNUM = B.SNUM
AND B.PNUM = C.PNUM
```

```
GROUP BY A.SNAME, C.PNUM, C.PNAME
ORDER BY A.SNAME, C.PNUM;
```

	A	SNAME		B	PNUM		C	PNAME		D	SUM(B.QUANTITY)
1		ADAMS	...		P1			NUT	...		269
2		ADAMS	...		P2			BOLT	...		619
3		ADAMS	...		P3			SCREW	...		874
4		ADAMS	...		P4			SCREW	...		476
5		ADAMS	...		P5			CAMERA	...		1221
6		ADAMS	...		P6			WRENCH	...		318
7		ADAMS	...		P7			C-O-G	...		145
8		BLAKE	...		P3			SCREW	...		215
9		BLAKE	...		P4			SCREW	...		512
10		CLARK	...		P6			WRENCH	...		627
11		JONES	...		P3			SCREW	...		2981
12		JONES	...		P5			CAMERA	...		(null)
13		SMITH	...		P1			NUT	...		900

5. Get project names for projects using at least two parts from supplier S1.

```
SELECT DISTINCT A.PROJNAME FROM PROJECT A
WHERE 1 < (SELECT COUNT (B.PNUM) FROM SHIPMENT B
WHERE B.SNUM = 'S1' AND B.PROJNUM = A.PROJNUM);
```

6. Get part names for parts shipped by at least 2 different suppliers in LONDON.

```
SELECT DISTINCT A.PNAME FROM PARTS A
WHERE 1 < (SELECT COUNT (DISTINCT B.SNUM) FROM SHIPMENT B, SUPPLIERS C
WHERE B.PNUM = A.PNUM
AND B.SNUM = C.SNUM AND C.CITY = 'LONDON');
```

7. Get all the colors that are not shipped by the supplier S1.

```
SELECT DISTINCT A.COLOR FROM PARTS A
WHERE A.COLOR NOT IN (SELECT B.COLOR FROM PARTS B, SHIPMENT C
WHERE B.PNUM = C.PNUM
AND C.SNUM = 'S1');
```

	A	COLOR
1		BLUE
2		GREEN

8. Get the supplier names for the suppliers who did not ship any part that is green.

```
SELECT DISTINCT A.SNAME FROM SUPPLIERS A
WHERE A.SNUM NOT IN (SELECT C.SNUM FROM SHIPMENT C, PARTS B
WHERE C.PNUM = B.PNUM
AND B.COLOR = 'GREEN');
```

	SNAME
1	SMITH
2	CLARK
3	JONES
4	BLAKE

9. Get the supplier names of suppliers who only shipped parts that weigh less than 15 oz.

```
SELECT DISTINCT A.SNAME FROM SUPPLIERS A
WHERE A.SNUM NOT IN (SELECT B.SNUM FROM SHIPMENT B, PARTS C
WHERE B.PNUM = C.PNUM
AND C.WEIGHT >= 15);
```

	SNAME
1	SMITH

10. Get part numbers for parts that were shipped by a supplier in LONDON and that supplier ships only to projects that are located in LONDON.

```
SELECT DISTINCT A.PNUM FROM PARTS A, SHIPMENT B, SUPPLIERS C
WHERE C.CITY = 'LONDON'
AND C.SNUM = B.SNUM
AND A.PNUM = B.PNUM
AND C.SNUM NOT IN (SELECT D.SNUM FROM SHIPMENT D, PROJECT E
WHERE D.PROJNUM = E.PROJNUM
AND E.CITY <> 'LONDON');
```

11. Get project names for projects that were sent shipments by both suppliers S1 and S2.

```
SELECT DISTINCT A.PROJNAME FROM PROJECT A
WHERE EXISTS (SELECT C.PROJNUM FROM SHIPMENT C WHERE C.SNUM = 'S1'
AND C.PROJNUM = A.PROJNUM)
AND EXISTS (SELECT D.PROJNUM FROM SHIPMENT D WHERE D.SNUM = 'S2'
AND D.PROJNUM = A.PROJNUM);
```

	PROJNAME
1	CONSOLE
2	SORTER

12. Get part names for parts shipped to any project in LONDON.

```
SELECT DISTINCT A.PNAME FROM PARTS A, SHIPMENT B, PROJECT C
WHERE A.PNUM = B.PNUM
AND B.PROJNUM = C.PROJNUM
AND C.CITY = 'LONDON';
```

	PNAME
1	SCREW
2	CAMERA
3	NUT