**Lab 3**

**Name :** Pritesh Gandhi & Peter Luciani

21. Get job numbers for jobs using at least one part available from supplier S1.

Query:

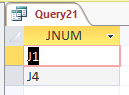
SELECT DISTINCT J.JNUM

FROM Jobs AS J, Shipment AS SP

WHERE J.JNUM = SP.JNUM

AND SP.SNUM = 'S1';

Result:



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22. Get supplier numbers for suppliers that ship at least one part shipped by at least one supplier

who ships at least one red part.

Query :

SELECT DISTINCT SP3.SNUM

FROM Shipment SP3

WHERE SP3.PNUM IN (SELECT DISTINCT SP2.PNUM

FROM Shipment SP2

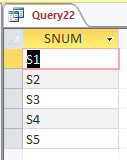
WHERE EXISTS (SELECT DISTINCT SP1.SNUM

FROM Shipment AS SP1, Parts AS P

WHERE P.PNUM = SP1.PNUM

AND P.Color = 'Red'));

Result :



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23. Get supplier numbers for suppliers with a status lower than that of supplier S1.

Query:

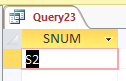
SELECT SS.SNUM

FROM Supplier AS FS, Supplier AS SS

WHERE FS.SNUM = 'S1'

AND SS.Status < FS.Status;

Result:



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24. Get job numbers for jobs whose city is first in the alphabetic list of such cities.

Query:

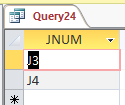
SELECT J1.JNUM

FROM Jobs J1

WHERE J1.CITY=(SELECT MIN(J2.CITY)

FROM Jobs AS J2);

Result:



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25. Get job numbers for jobs that receive shipment(s) of part P1 in an average quantity greater than the greatest quantity in which any part is shipped to job J1.

Query:

SELECT DISTINCT AVG\_SP.JNUM

FROM (SELECT SP.JNUM, AVG(SP.QTY) AS AVG\_QTY

FROM Shipment AS SP

WHERE SP.PNUM='P1'

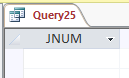
GROUP BY SP.JNUM) AS AVG\_SP

WHERE AVG\_SP.AVG\_QTY>(SELECT MAX(SP\_MAX.QTY)

FROM Shipment SP\_MAX

WHERE SP\_MAX.JNUM='J1');

Result:



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26. Get supplier numbers for suppliers that ship part P1 to some job in a quantity greater than the

average shipment quantity of part P1 for that job.

Query:

SELECT DISTINCT SP.SNUM

FROM Shipment AS SP, (SELECT SP\_AVG.JNUM, AVG(SP\_AVG.QTY) AS AVG\_QTY

FROM Shipment AS SP\_AVG

WHERE SP\_AVG.PNUM='P1'

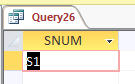
GROUP BY SP\_AVG.JNUM) AS J\_AVG

WHERE SP.PNUM='P1'

AND SP.JNUM=J\_AVG.JNUM

AND SP.QTY>J\_AVG.AVG\_QTY;

Result:



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27. Get job numbers for jobs that receive no shipments of any red part by any London supplier.

Query:

SELECT DISTINCT SP.JNUM

FROM Shipment AS SP

WHERE SP.JNUM NOT IN

(SELECT SP.JNUM

FROM Shipment AS SP, Parts AS P, Supplier AS S

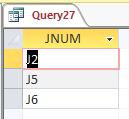
WHERE P.PNUM = SP.PNUM

AND S.SNUM = SP.SNUM

AND P.COLOR = 'Red'

AND S.CITY = 'London');

Result:



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28. Get job numbers for jobs whose shipments come solely from supplier S1.

Query:

SELECT SP1.JNUM

FROM (SELECT SP2.JNUM

FROM Shipment AS SP2

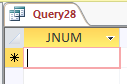
WHERE SP2.SNUM='S1') AS SP1

WHERE SP1.JNUM NOT IN ( SELECT SP3.JNUM

FROM Shipment SP3

WHERE SP3.SNUM<>'S1');

Result:



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29. Get part numbers for parts shipped to all jobs in London.

Query:

SELECT DISTINCT SP\_FIRST.PNUM

FROM Shipment AS SP\_FIRST

WHERE NOT EXISTS

(SELECT \*

FROM Jobs J

WHERE J.CITY='London'

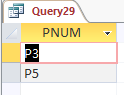
AND NOT EXISTS (SELECT \*

FROM Shipment SP\_SECOND

WHERE SP\_FIRST.PNUM=SP\_SECOND.PNUM

AND SP\_SECOND.JNUM=J.JNUM));

Result:



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30. Get supplier numbers for suppliers who ship the same part to all jobs.

Query:

SELECT SP.SNUM

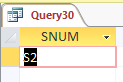
FROM Shipment AS SP

GROUP BY SP.SNUM, SP.PNUM

HAVING COUNT(SP.JNUM)=(SELECT COUNT(\*)

FROM Jobs J );

Result:



Cardinality: C:\Users\Pritz\AppData\Local\Microsoft\Windows\INetCache\Content.Word\q30.png

31. Get job numbers for jobs that receive shipments of at least all parts available from supplier S1.

Query:

SELECT SP1.JNUM

FROM Shipment AS SP1

WHERE SP1.SNUM='S1'

GROUP BY SP1.JNUM

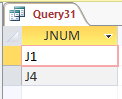
HAVING COUNT(SP1.PNUM)= ( SELECT COUNT (\*)

FROM (SELECT DISTINCT SP2.PNUM

FROM Shipment SP2

WHERE SP2.SNUM='S1'));

Result:



Cardinality: C:\Users\Pritz\AppData\Local\Microsoft\Windows\INetCache\Content.Word\q31.png

32. Get all cities in which at least one supplier, part, or job is located.

Query:

(SELECT S.CITY

FROM Supplier S)

UNION

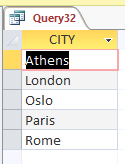
(SELECT J.CITY

FROM Jobs J

UNION SELECT P.CITY

FROM Parts P);

Result:



Cardinality: C:\Users\Pritz\AppData\Local\Microsoft\Windows\INetCache\Content.Word\q32.png

33. Get part numbers for parts that are shipped either by a London supplier or to a London job.

Query:

(SELECT DISTINCT SP.PNUM

FROM Shipment AS SP, Supplier AS S, Jobs AS J

WHERE S.SNUM = SP.SNUM

AND J.JNUM = SP.JNUM

AND S.City = 'London')

UNION

(SELECT DISTINCT SP.PNUM

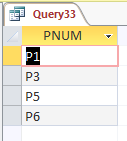
FROM Shipment AS SP, Supplier AS S, Jobs AS J

WHERE S.SNUM = SP.SNUM

AND J.JNUM = SP.JNUM

AND J.City = 'London');

Result:



Cardinality: C:\Users\Pritz\AppData\Local\Microsoft\Windows\INetCache\Content.Word\q33.png