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(<https://play.google.com/store/apps/details?id=com.analyticsvidhya.android>)

The screenshot shows the Analytics Vidhya mobile application interface. At the top left is the Analytics Vidhya logo. A red button labeled "Online Course" is visible. The main title is "Fundamentals of Deep Learning". Below it, a sub-headline says "Learn to build Deep Learning models". To the right, there's a 3D rendering of a server tower with three blue rectangular components in front of it. On the right side of the screen, there's a "LOGIN / REGISTER" button and a URL: [https://id.analyticsvidhya.com/auth/login/?flash\\_strip&utm\\_campaign=CBAP\\_may\\_pre\\_launch](https://id.analyticsvidhya.com/auth/login/?flash_strip&utm_campaign=CBAP_may_pre_launch). At the bottom, there's a URL: <https://www.analyticsvidhya.com/blog/2017/01/46-questions-on-sql-to-test-a-data-science-professional-skilltest-solution/>.

(<https://courses.analyticsvidhya.com/courses/fundamentals-of-deep-learning/>)

**SKILLTEST-SOLUTION/**

The screenshot shows the Analytics Vidhya course page for "Retail Demand Prediction Using Machine Learning". It features the Analytics Vidhya logo at the top left. A red button labeled "Online Course" is present. The main title is "Retail Demand Prediction Using Machine Learning". Below it, a sub-headline says "Solve a Business Problem using Machine Learning". To the left, there's a 3D rendering of a bar chart and a line graph. On the right, there's a "Vidhya analytics" logo and a URL: <https://www.analyticsvidhya.com/blog/>. Below the URL, there are two more URLs: <https://www.analyticsvidhya.com/blog/category/advanced/> and <https://www.analyticsvidhya.com/blog/category/business-analytics/>.

(<https://courses.analyticsvidhya.com/courses/retail-demand-prediction-using-machine-learning/>)

[DATA EXPLORATION \(<https://www.analyticsvidhya.com/blog/category/data-exploration/>\)](https://www.analyticsvidhya.com/blog/category/data-exploration/)

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## 46 Questions on SQL to test a data science professional (Skilltest Solution)

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<http://courses.analyticsvidhya.com/courses/introduction-to-data-6SQLquestionsarticle>) professional should know – it is SQL.

SQL stands for Structured Query Language. It is a query language used to access data from relational databases and is widely used in data science ([http://courses.analyticsvidhya.com/courses/introduction-to-deep-learning?utm\\_source=Sticky\\_banner1&utm\\_medium=display&utm\\_campaign=CBAP\\_may](http://courses.analyticsvidhya.com/courses/introduction-to-deep-learning?utm_source=Sticky_banner1&utm_medium=display&utm_campaign=CBAP_may))

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unity on SQL and it gave 2017 a rocking start. A total of 1,666 challenges people encounter while using SQL. In this article, we took the test, check out which areas need improvement. If you look at the questions and check your skill level independently.

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**SQL SKILLTEST**

**46 Questions**

(<https://cdn.analyticsvidhya.com/wp-content/uploads/2017/01/46-Questions-on-SQL-1.png>).

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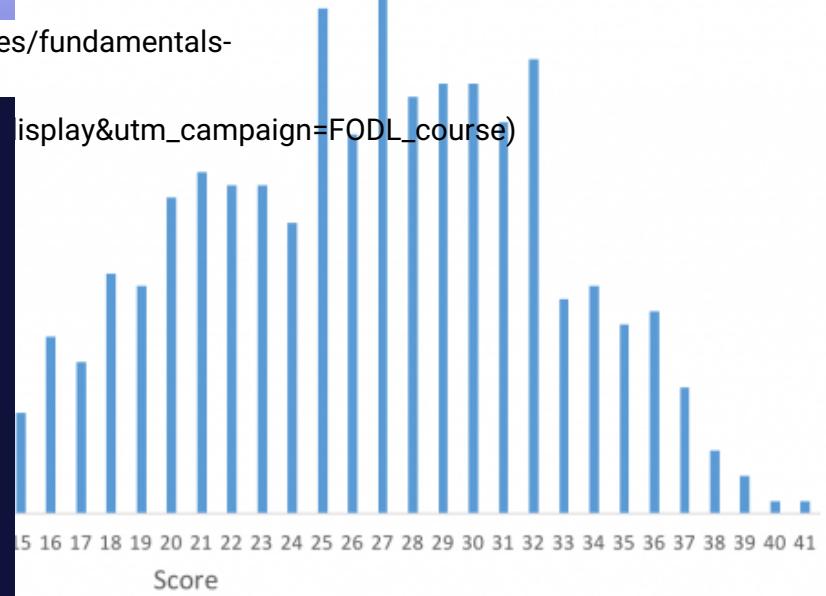
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You can assess your performance here (<https://datahack.analyticsvidhya.com/contest/sql-skilltest/lb>). More than 700 people participated in the skilltest and the highest score was 41. Here are a few statistics about the distribution.



## Overall distribution

Mean Score: 22.32

Median Score: 25

Mode Score: 27

This is an interesting distribution. I think we are seeing 3 different profiles of people here:

- There are ~20 people who did not score at all. They either faced some technical problem or did not like the test or did not know SQL.
  - There is another population which looks to have normal distribution between scores 1 to 10. These

The image features the Analytics Vidhya logo at the top left. Below it, a large orange box contains the text "Online Course". To the right, there is a graphic of a server tower with three smaller server units connected to it, all set against a dark blue background.

ion between scores 10 and 41 and looks like a representative of  
is 25.8 and standard deviation  $\sim 6.5$ . So any one with a score  
population.

?

(<https://courses.analyticsvidhya.com/courses/fundamentals-of-data-science>)

Basics of learning a RDBMS – must have skills for data science professionals



`jspDisplay&site=sci&id=1000/FODL_course)`

operations (<https://www.analyticsvidhya.com/blog/2015/12/sql-commands-common-excel/>

of occurrence in a typical SQL statement?

(<https://courses.analyticsvidhya.com/courses/retail-B-select-where-group-by-having-demand-prediction-using-machine-learning?>

utm\_source=Sticky\_banner2&utm\_medium=display&utm\_campaign=Retail\_course)  
C. select, where, having, group byselect, having, where, group by

D. select, having, where, group by

**Solution:** B

“Where” always comes before “group by” and “having” always comes after “group by”.

### Question Context: 2 to 12

## STUDENT



Sid	name	login	age	gpa
53666	Kayne	A@cs	28	4.0
		B@cs	26	3.5
		C@cs	22	3.9

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cid	grade
15-415	C
15-721	A
15-826	B
15-415	C
15-721	C

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Q2) Which of the following is the correct outcome of the SQL query below?

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isplay&utm\_campaign=FODL\_course)  
grade = 'C'

receive the grade C in the course

udent receive the grade C in the course

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The query will extract the course ids where student receive the grade "C" in the course.  
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Q3) Which of the following is the correct outcome of the SQL query below?

Query: `SELECT DISTINCT cid FROM ENROLLED WHERE grade = 'C'`

- A. Extract the course ids where student receive the grade C in the course
- B. Extract the Distinct course ids where student receive the grade of C in the course
- C. Error
- D. None of these

## Solution: B

By using DISTINCT keyword you can extract the Distinct course ids where student receive the grade of C in

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some of the SQL query below?

```
SELECT course_id FROM student WHERE grade = 'C' AND course_id IN (SELECT course_id FROM enrolled WHERE student.sid = enrolled.sid AND enrolled.course_id = student.course_id)
```

corresponding course ids

responding course id where they have received grade C

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and STUDENT tables then it will evaluate the WHERE condition and corresponding course id where they received the grade of C.

some of the SQL query below?

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```
SELECT student.name, student.grade FROM student, enrolled WHERE student.sid = enrolled.sid AND enrolled.course_id = student.course_id AND student.grade = 'C' AND enrolled.course_id = 15415
```

- A. Returns the name, grade of the students who took course '15-415' and got a grade' A' or 'B' in that course
- B. Returns the name, grade of the students who took the course '15-415' but didn't get grade 'A' or 'B' in that course
- C. Error
- D. None of these

## Solution: A

The above query first joined the ENROLLED and STUDENT tables then it will evaluate the where condition and then it will return the name, grade of the students, those took 15-415 and got a grade 'A' or 'B' in the course. But for the given two tables it will give zero records in output.

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Q1) Which unique students who have taken more than one course?

A. SELECT DISTINCT sid FROM enrolled AS e1 JOIN enrolled AS e2 WHERE e1.sid != e2.sid AND e1.course\_id = e2.course\_id  
 B. SELECT DISTINCT sid FROM enrolled AS e1 JOIN enrolled AS e2 WHERE e1.sid = e2.sid AND e1.course\_id <> e2.course\_id  
 C. SELECT DISTINCT sid FROM enrolled AS e1 JOIN enrolled AS e2 WHERE e1.sid != e2.sid AND e1.course\_id <> e2.course\_id

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will first apply self join on enrolled table and then it evaluate the

Q2) Which of the following query(s) will add a column 'F\_name' to the STUDENT table?

A. ALTER TABLE Student add F\_name varchar(20);

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D. ALTER TABLE Student add column (F\_name);

## Solution: B

ALTER TABLE command allows a user to add a new column to a table. Option B is correct syntax of ALTER to add a column in the table.

Q8) Which of the following query(s) will result in a successful insertion of a record in the STUDENT table?

Query1: INSERT INTO student (sid, name, login, age, gpa) VALUES (53888, 'Drake', 'drake@cs')

Query2: INSERT INTO student VALUES (53888, 'Drake', 'drake@cs', 29, 3.5)

A. Both queries will insert the record successfully

B. Query 1 will insert the record successfully and Query 2 will not

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and Query 1 will not

record successfully

table student. The Query 1 is useful when you want to Provide  
es and Query 2 is a Short-hand version of insert command

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OP) 'Sid' in "ENROLLED" table is 'Foreign Key' referenced by 'Sid' in "STUDENT" table. Now you want to insert a

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ow in ENROLLED table successfully?

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```
57, '15-420', 'C');
56, '15-421', 'C');
57, '15-415', 'C');
56, '15-415', 'C');
```

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demand-prediction-using-machine-learning?

C. 2 and 4  
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D. Only 4

### Solution: C

Option 2 and 4 will run successfully because in ENROLLED table's 'Sid' column you can insert those values which are present in STUDENT's table 'Sid' columns due to foreign key.

**Q10) Consider the following queries:**

Query1: select name from enrolled LEFT OUTER JOIN student on student.sid = enrolled.sid;

Query2: select name from student LEFT OUTER JOIN enrolled on student.sid = enrolled.sid;

## Which of the following option is correct?

- A. Queries 1 and 2 will give the same results.

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will run successfully

will run successfully

matters. But both query will give the same results because both don't which column is selected.

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isplay&utm\_campaign=FODL\_course) to modify the data type of "Sid" column in ENROLLED table?

ween tables STUDENT and ENROLLED.

varchar(100));

varchar(100);

on (sid varchar(100));

(<https://courses.analyticsvidhya.com/courses/review-enrolled-modify-column>);

(<https://courses.analyticsvidhya.com/courses/rail-demand-prediction-using-machine-learning>)?

**Solution: A**

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The "ALTER TABLE MODIFY" is used to modify column definition in a table. So option A is correct.

**Q12) Which of the following statement will remove the 'Sid' column from the ENROLLED table?**

**Note: There is no foreign key relationship between tables STUDENT and ENROLLED.**

- A. ALTER TABLE ENROLLED DROP (sid varchar(10) );
- B. ALTER TABLE ENROLLED DROP COLUMN (sid varchar(10) );
- C. ALTER TABLE ENROLLED DROP COLUMN Sid;

D. ALTER TABLE ENROLLED MODIFY (sid);

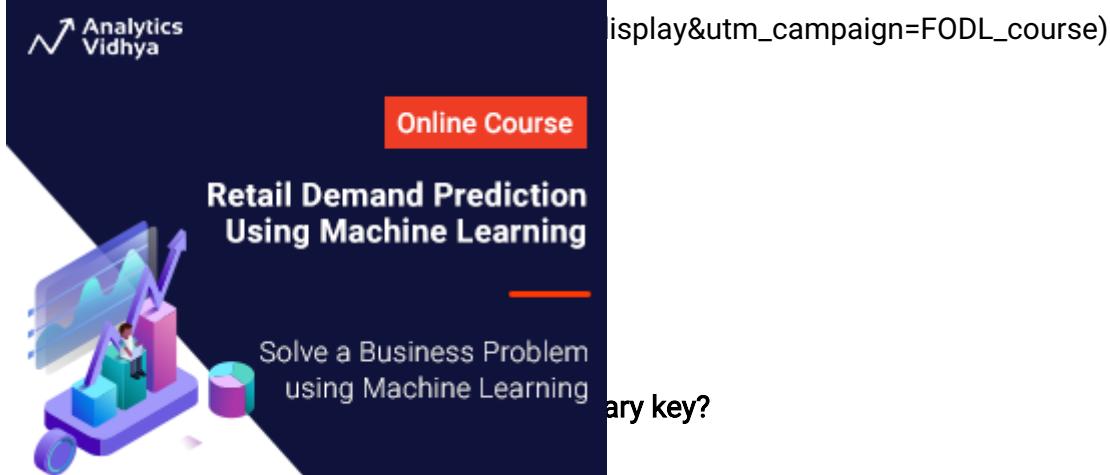
**Solution: C**



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used to drop a column from the table. So Option C is the right

are related to transaction control in SQL?



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ary key?

A. It can take a value more than once

B. It can take null values

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C. It can't take null values

D. None of these

**Solution: C**

In a relational schema, there exist only one primary key and it can't take null values. So option C is the correct answer.

**Q15) What is the difference between a primary key and a unique key?**

A. Primary key cannot be a date variable whereas unique key can be

B. You can have only one primary key whereas you can have multiple unique keys

C. Primary key can take null values but unique key cannot null values

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key in table. In relational schema, you can have only one primary key present in table. Unique key can take null values.

are true for UPDATE in SQL?

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D. 1. You can update only a single table using UPDATE command

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UPDATE command (`UPDATE table_name SET column1=value, column2=value ... WHERE condition;`) updates columns to update with their new values (separated by commas).

You need to specify UPDATE command using the WHERE clause.

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D. 1 only

D. 1 only  
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**Solution: A**

Options are self-explanatory.

**Q17) Which of the following is true for TRUNCATE in SQL?**

A. It is usually slower than DELETE command

B. It is usually faster than DELETE command

C. There is no comparison between DELETE & TRUNCATE

D. Truncate command can be rolled back

E. None of these

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cate is a ddl command so it does not produce any rollback and while the delete command is a dml command and it produces rollbacked using delete command.

Select about 'CREATE TABLE' command while creating a table?

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datatype to column even after creating a table

while creating a table

utes like data types and precision in order to build the structure

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Q19) Which of the following are the synonyms for 'column' and 'row' of a table?  
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1. Row = [Tuple, Record]
2. Column = [Field, Attribute]
3. Row = [Tuple, Attribute]
4. Columns = [Field, Record]

Select the correct option:

- A. 1 and 2
- B. 3 and 4
- C. Only 1
- D. Only 2

## Solution: A

In DBMS records are also known as tuple and rows. And columns are known as attributes and fields.

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for comparing 'NULL' values in SQL?

D. None of Above  
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The banner features a 3D bar chart and a line graph with a person standing next to them, representing retail demand prediction.

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You need to use IS statement.

are true about "HAVING" and "WHERE" clause in SQL?

BY" and HAVING after "GROUP BY"  
 Y" and "HAVING" before "GROUP BY"  
 'ING" is used to filter groups  
 "AVING" is used to filter rows

T. WHERE is used to filter groups but HAVING is used to filter rows  
[\(https://courses.analyticsvidhya.com/courses/rail-demand-prediction-using-machine-learning/?\)](https://courses.analyticsvidhya.com/courses/rail-demand-prediction-using-machine-learning/)

Select the correct option:  
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- A. 1 and 3
- B. 1 and 4
- C. 2 and 3
- D. 2 and 4

## Solution: A

HAVING is performed after GROUP BY. If you have to apply some conditions to get results. you need to use WHERE before group by.

**Q22) Identify, which of the following column "A" or "C" given in the below table is a "Primary Key" or "Foreign Key"?**

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A	C
2	4
3	4
4	3
5	2
7	2
9	5
6	4

([https://courses.analyticsvidhya.com/courses/fundamentals-of-deep-learning/?utm\\_source=display&utm\\_campaign=FODL\\_course](https://courses.analyticsvidhya.com/courses/fundamentals-of-deep-learning/?utm_source=display&utm_campaign=FODL_course))

The advertisement features a dark blue background with a white circular graphic containing a bar chart and a pie chart. Text includes 'Analytics Vidhya', 'Online Course', 'Retail Demand Prediction Using Machine Learning', 'Solve a Business Problem using Machine Learning', and a URL: [https://courses.analyticsvidhya.com/courses/retail-demand-prediction-using-machine-learning/?utm\\_source=display&utm\\_campaign=RDML\\_course](https://courses.analyticsvidhya.com/courses/retail-demand-prediction-using-machine-learning/?utm_source=display&utm_campaign=RDML_course).

Question: Which column is 'Primary Key' and which is 'Foreign Key'

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A doesn't have null values. So it can be considered as Primary key of this table. Whereas B is the example of Foreign key because null values present in this column are already present in column A.

**Q23) What are the tuples additionally deleted to preserve reference integrity when the rows (2,4) are deleted from the below table. Suppose you are using 'ON DELETE CASCADE'.**



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A	C
2	4
3	4
4	3
5	2
7	2
9	5
6	4

NOTE: We have defined 'Foreign Key' and 'Primary Key' in single table  
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y referring A with delete on cascade, all entries with value 2 in C  
 ted. As a result of this 5 and 7 are deleted from A which causes

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**Q24) Suppose you are given a table/relation "EMPLOYEE" which has two columns ('Name' and 'Salary'). The Salary column in this table has some NULL values. Now, I want to find out the records which have null values.**

Name	Salary
Saurav	Null
Ankit	1000
Faizan	2000
Sunil	3000
Kunal	4000

What will be the output for the following queries?



**Q26) Tables A, B have three columns (namely: 'id', 'age', 'name') each. These tables have no 'null' values and there are 100 records in each of the table.**

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es 'A' and 'B':

age > ALL (SELECT B.age FROM B WHERE B.name = 'Ankit')

age > ANY (SELECT B.age FROM B WHERE B.name = 'Ankit')

ect for the output of each query?

y 1 will be more than or equal to the output of Query 2

y 1 will be equal to the output of Query 2

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return multiple values. **ANY** returns true if **any** of the subquery

. it will returns the records if all conditions are true. So options C

**What is true about relation (table) in different normal forms (1NF, 2NF, 3NF)?**

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1. If a relation satisfies the conditions of 1NF. It will automatically satisfy the conditions of 2NF

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2. If a relation satisfies the conditions of 2NF. It will automatically satisfy the conditions of 1NF

3. If a relation satisfies the conditions of 3NF. It will automatically satisfy the conditions of 1NF

4. If a relation satisfies the conditions of 2NF. It will automatically satisfy the conditions of 3NF

Select the correct option:

A. 1 and 2

B. 2 and 3

C. 1 and 3

D. 2 and 4

**Solution: B**

If a relation is satisfying higher normal forms, it automatically satisfies lower normal forms also. For example, if a relation is satisfying kNF it will automatically satisfy gNF where  $g \leq k$ .

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The banner features a server tower with three blue rectangular blocks in front of it.

s ('Primary Key', 'Super Key' and 'Candidate Key') in a database. t?

Key

Candidate Key"

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The banner features a 3D bar chart with a person standing next to it.

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**Q29) Consider a relation R with the schema R (A, B, C, D, E, F) with a set of functional dependencies F as follows:**

{AB->C, BC->AD, D->E, CF->B}

Which of the following will be the output of DA+?

Note: For any X, X+ is closure of X.

A) DA

B) DAE

C) ABCD

D) ABCDEF

**Solution: B**

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anager	Loan_Amount
an	10000.00
ll	5000.00
an	7000.00

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SELECT Borrower, Bank\_Manager FROM Loan\_Records) AS S NATURAL JOIN (SELECT \* FROM (SELECT \* FROM Loan\_Records WHERE Campaign = 'Retail\_course') AS T1, (SELECT \* FROM Bank\_Managers WHERE Manager\_ID = 1) AS T2 WHERE T1.Borrower = T2.Borrower AND T1.Bank\_Manager = T2.Bank\_Manager) AS T3 WHERE T3.Borrower = 'Ramesh' AND T3.Bank\_Manager = 'Sunderajan'

?

**Solution: B**  
 ([https://courses.analyticsvidhya.com/courses/retail-demand-prediction-using-machine-learning/?utm\\_source=Sticky\\_banner2&utm\\_medium=display&utm\\_campaign=Retail\\_course](https://courses.analyticsvidhya.com/courses/retail-demand-prediction-using-machine-learning/?utm_source=Sticky_banner2&utm_medium=display&utm_campaign=Retail_course))

Temporary table S is given below

Borrower	Bank_Manager
Ramesh	Sunderajan
Suresh	Ramgopal
Mahesh	Sunderjan

Temporary table T is given below

Bank_Manager	Loan_Amount
Sunderajan	10000.00
Ramgopal	5000.00
Sunderjan	7000.00

If you apply natural join on both tables (S and T) and evaluate the condition on 'Bank\_Manager'. You will get the following intermediate table after apply

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Bank_Manager	Loan_Amount
Sunderajan	10000
Sunderajan	7000
Ramgopal	5000
Sunderajan	10000
Sunderajan	7000

ager column, so their will be four entries with Bank\_Manager as in outer query.

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isplay&utm\_campaign=FODL\_course) to "PROJECT" operation in relational algebra?

ives the unique record but in case of 'SELECT' operation in SQL unique records.

(<https://courses.analyticsvidhya.com/courses/retail-demand-prediction-using-machine-learning/>)

table source=Sticky\_banner2&utm\_medium=display&utm\_campaign=Retail\_course)

Name	Salary	Company	Designation
Saurav	1000	AV1	Junior Data Scientist
Ankit	800	AV1	Data Scientist
Sunil	1200	AV2	Senior Manager
Kunal	1400	AV2	CEO
Deepak	1100	AV3	Data Entry Operator
Swati	1200	AV3	BDE
Faizan	900	AV1	Deep Learning Expert

Questions 32-36 are based on the above table.

Q32) What will be the output of following query?

Query 1: Select name from AV1 where name like '%a%'

1. Saurav Ankit Kunal Deepak Swati Faizan



column 'Name' which will have atleast one 'a' and 'Like' is true. Hence B is true.

Table: AV1  
(<https://courses.analyticsvidhya.com/courses/fundamentals-of-deep-learning/>)?

	display&utm_medium=display&utm_campaign=Retail_course)	Designation
	AV1	Junior Data Scientist
	AV1	Data Scientist
	AV2	Senior Manager
	AV2	CEO
	AV3	Data Entry Operator
	AV3	BDE
	AV1	Deep Learning Expert

What will be the output of the query?

SELECT name FROM AV1 WHERE name LIKE '%\_\_\_\_\_%' ;

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**Note: The above operation contains 6 underscores ('\_') used with LIKE operator.**

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- A. It will return names where number of characters in names are greater than or equals to 6
- B. It will return names where number of characters in names are greater than 6
- C. It will return names where number of characters in names are less than or equals to 6
- D. It will give an error

**Solution: A**

The query will search for records in column 'Name' where the number of characters in names are greater than or equal to 6.

### Q34) What will be the output of the below query?

Query: `SELECT Company, AVG(Salary) FROM AV1 HAVING AVG(Salary) > 1200 GROUP BY Company WHERE`

The advertisement features a purple background with a central server icon and three teal rectangular blocks below it. Text on the left reads "Online Course Fundamentals of Deep Learning Learn to build Deep Learning models". To the right are two tables:

avg
1300

avg
1150
1300

(<https://courses.analyticsvidhya.com/courses/fundamentals-of-deep-learning/>)?

The advertisement features a dark blue background with a central bar chart and a person sitting at a desk. Text on the left reads "Online Course Retail Demand Prediction Using Machine Learning Solve a Business Problem using Machine Learning". To the right is a table:

avg
1200
1300

'E' is always evaluated before 'GROUP BY' and 'Having' is always

(<https://courses.analyticsvidhya.com/courses/retail-demand-prediction-using-machine-learning/>)

Q35) What will be the output for the below Query 1 and Query 2?  
 (https://courses.analyticsvidhya.com/courses/display-and-query=Retail\_course)

Query 1: `SELECT MAX(Salary) FROM AV1 WHERE Salary < (SELECT MAX(Salary) from AV1);`

Query 2: `WITH S AS (SELECT Salary, ROW_NUMBER() OVER(ORDER BY Salary DESC) AS RowNum FROM A`

A. Query 1 output = 1200 and Query 2 output =1200

B. Query 1 output = 1200 and Query 2 output =1400

C. Query 1 output = 1400 and Query 2 output =1200

D. Query 1 output = 1400 and Query 2 output =1400

**Solution: A**

Both queries will generate the second-highest salary in AV1 which is 1200. Hence A is right option.

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a.

.ng)

.ring)

(courseno: integer, percent: real)

**able to find the unique names of all students having score more**

(<https://courses.analyticsvidhya.com/courses/fundamentals-of-deep-learning/>)

SELECT DISTINCT S.sname FROM Students as S, Registration as R WHERE R.rollno=S.rollno AND

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ents as S, Registration as R WHERE R.rollno=S.rollno AND

stration as R WHERE R.rollno=S.rollno AND R.courseno=107 AND

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Option A is true, Option B will give the error ("UNIQUE" is not used in SQL) and in option C unique names will not be the output.

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**Q37) Consider the relation T1 (A, B) in which (A, B) is the primary key and the relation T2 (A, C) where A is the primary key. Assume there are no null values and no foreign keys or integrity constraints.**

**Now, which of the following option is correct related to following queries?**

Query 1: select A from T1 where A in (select A from T2)

Query 2: select A from T2 where A in (select A from T1)

A. Both queries will definitely give the same result

B. Both queries may give the same result

C. Both queries will definitely give a different result

D. None of these

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e) for the column A in tables T1 and T2. Query 1 and Query 2 will about following queries?

1 FROM emp NATURAL JOIN department

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Query 2: SELECT emp.id, department.id FROM department NATURAL JOIN emp

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;

In natural joins, the order doesn't matter. The queries will return same results.

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## Solution: C

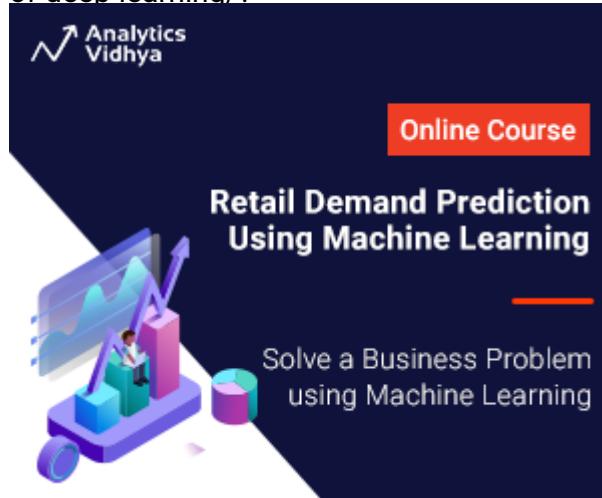
In BST on right side of parent number should be greater than it, but in C after 47, 43 appears that is wrong.



Sequential scan in SQL, then what will happen?

million.

(<https://courses.analyticsvidhya.com/courses/fundamentals-of-deep-learning/>)?



isplay&utm\_campaign=FODL\_course)

Execution faster since the sequential scan is replaced by the index

3 columns ('User\_ID', 'Gender', 'Product\_ID') and 7,150,884 rows.  
n SQL.

(<https://courses.analyticsvidhya.com/courses/retail-demand-prediction-using-machine-learning/>)

Now, you run Query 1 as given below and get the following output:  
demand-prediction-using-machine-learning?  
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Query 1: EXPLAIN select \* from train where Product\_ID = 'P00370853';

## OUTPUT:

### QUERY PLAN

```
Seq Scan on train (cost=0.00..79723.88 rows=16428 width=68)
Filter: ((product_id)::text = 'P00370853'::text)
(2 rows)
```

You have now created Product\_ID column as an index in train table using the below SQL query:

CREATE INDEX product\_ID ON train(Product\_ID)

And, you run Query 2 (same as Query 1) on "train" and get the following output.

Query 2: EXPLAIN select \* from train where Product\_ID = 'P00370853';

OUTPUT:

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```
53..40738.85 rows=35754 width=68)
P00370853'::text)
cost=0.00..820.59 rows=35754 width=0)
P00370853'::text)
```

Which query will take less time to execute?  
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```
isplay&utm_campaign=FODL_course)
```

is 79723.88 and for Query Plan of Query 2 execution time is

<https://www.analyticsvidhya.com/courses/retail-demand-prediction-using-machine-learning/>

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**Q42) Suppose you have a CSV file which has 3 columns ('User\_ID', 'Gender', 'product\_ID') and 7150884 rows. You have created a table "train" from this file in SQL.**

Now, you run Query 1 (mentioned below):

Query1: EXPLAIN SELECT \* from train WHERE product\_ID like '%7085%';

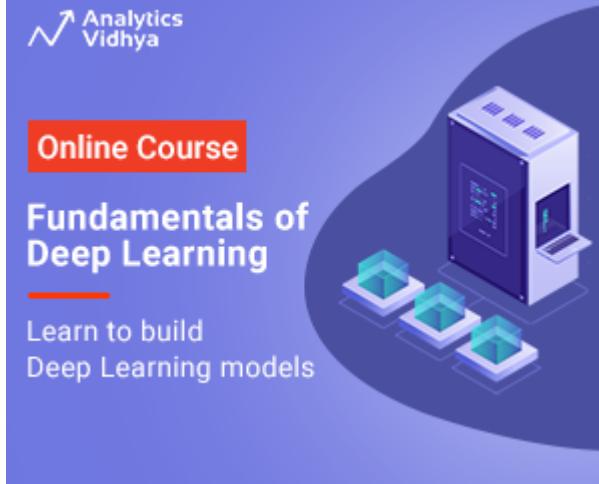
Then, you created product\_ID columns as an index in 'train' table using below SQL query:

CREATE INDEX product\_ID ON train(Product\_ID)

Suppose, you run Query 2 (same as Query 1) on train table.

Query 2: EXPLAIN SELECT \* from train WHERE product\_ID like '%7085%';

Let T1 and T2 be time taken by Query 1 and Query 2 respectively. Which query will take less time to execute?



The addition of the index didn't change the query execution plan since the index doesn't help for the 'LIKE' operator.  
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 Here, Query 1 is taking T1 time and Query 2 is taking T2 time.

Which of the following is true for the queries time?  
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- A. T1 > T2
- B. T2 > T1
- C. T1 ~ T2
- D. Can't say

### Solution: C

The addition of the index didn't change the query execution plan. The index on rating will not work for the query ( $\text{Salary} * 100 > 5000$ ). Theoretically it might work in this case, but obviously the system is not "smart" enough to work that way; But you can create an index on ( $\text{Salary} * 100$ ) which will help.

Q44) Suppose you are given a table 'words'. The table has 2 columns 'id' and 'word'.

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word	
	My
	Name
	Is
	Ankit
5	Gupta
	I
	Love
	Solving
	Data
	Mining
	Problems

What will be the output for the below query?

Query: select c1, c2, c3 from ( select id, lag(word) over (order by id) as c1, word as c2, lead(word) over (order by id) as c3 from words ) as t where c2 = 'Mining' or c2 = 'Problems';

A.

c1	c2	c3
Data	Mining	Problems
Mining	Problems	

B. Error

C.

c1	c2	c3
Data	Mining	Problems

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Q3. If there are more than one table involved in the view, we cannot perform (Data Manipulation Language) DML queries of deep learning? (<https://courses.analyticsvidhya.com/courses/fundamentals-of-deep-learning/>)

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**Solution:** D  
All options are correct. banner2&utm\_medium=display&utm\_campaign=Retail\_course)

**Q46) Suppose I created a table called 'avian' using below SQL query:**

Query: CREATE TABLE avian ( emp\_id SERIAL PRIMARY KEY, name varchar);

**Now, I want to insert some records in the table avian:**

Query1: INSERT INTO avian (name) VALUES('FRAZY');

Query2: INSERT INTO avian (name) VALUES('ANKIT');

Query3: INSERT INTO avian (name) VALUES('SUNIL');

Query4: `INSERT INTO avian (name) VALUES('SAURAV');`

Which of the following will be the output of the below query?

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name
FRAZY
ANKIT
SUNIL
SAURAV

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name
FRAZY
ANKIT
SUNIL
SAURAV

([https://courses.analyticsvidhya.com/courses/retail-demand-prediction-using-machine-learning?utm\\_source=Sticky\\_banner2&utm\\_medium=display&utm\\_campaign=Retail\\_course](https://courses.analyticsvidhya.com/courses/retail-demand-prediction-using-machine-learning?utm_source=Sticky_banner2&utm_medium=display&utm_campaign=Retail_course))

At the time of table creation Avian, we have used SERIAL for 'emp\_id' which autoincrements emp\_id whenever you insert a record in table avian. Hence A is true.

## End Notes

I hope you enjoyed taking the test and you found the solutions helpful. The test focused on conceptual knowledge of SQL.

We tried to clear all your doubts through this article but if we have missed out on something then let me know in comments below. If you have any suggestions or improvements you think we should make in the next skilltest, let us know by dropping your feedback in the comments section.

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Ankit Gupta ([https://www.analyticsvidhya.com/blog/Author/Facebook\\_user\\_4/](https://www.analyticsvidhya.com/blog/Author/Facebook_user_4/))

Ankit is currently working as a data scientist at UBS who has solved complex data mining problems in many domains. He is eager to learn more about data science and machine learning algorithms.

[in\\_](https://www.linkedin.com/in/ankit-gupta-84b737ba?trk=nav_responsive_tab_profile) ([https://www.linkedin.com/in/ankit-gupta-84b737ba?trk=nav\\_responsive\\_tab\\_profile](https://www.linkedin.com/in/ankit-gupta-84b737ba?trk=nav_responsive_tab_profile))

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Hi Ankit,  
[utm\\_source=Sticky\\_banner2&utm\\_medium=display&utm\\_campaign=Retail\\_course](https://professional.skilltestsolution.com/#comment-120761))  
Thanks for the sols.

Q29 : didnt understand the qn. could you explain the qn and sol breifly.

Q38 : Query2 will throw an error since emp is not an alias for employee. Solution ans is wrong

Q39: For BST, i believe the series should be ordered. Can you breifly explain the sol again.

Regards,

B



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Hi Benny,

Thanks for noticing it

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[65B9qE](https://www.youtube.com/watch?v=IUPTC65B9qE) (<https://www.youtube.com/watch?v=IUPTC65B9qE>).  
[-x/](http://www.edugrabs.com/closure-of-a-set-x/) (<http://www.edugrabs.com/closure-of-a-set-x/>)

er the skill test.

we take the right sub-tree for 68. The right sub-tree can contain it 43 is less than 47 ( because 68 is inserted at the right side of 68, 43 suppose to be left side of 47 but it is right side of 47)

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4 hours . I really wanted to attempt the quiz but hardly I got 10 are many more things coming up. As this test are on weekend if good. Thanks

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Hi Philip,

demand-prediction-using-machine-learning?

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Feedback taken.

Best!

Ankit Gupta



**CXCHAN2**

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[January 9, 2017 at 5:29 pm](https://www.analyticsvidhya.com/blog/2017/01/46-questions-on-sql-to-test-a-data-science-skill-test-solution/#comment-120786) (<https://www.analyticsvidhya.com/blog/2017/01/46-questions-on-sql-to-test-a-data-science-skill-test-solution/#comment-120786>)

Hi Ankit,

Good job on the sql skill test. It was more like a sql refresher. I am not sure why there was no option of going back to correct or review a question. If we would have had that option, it would have been more helpful.


**ANKIT GUPTA**
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<https://www.analyticsvidhya.com/blog/2017/01/46-questions-on-sql-to-test-a-data-science-professional-skilltest-solution/#comment-120787>)  
 isplay&utm\_campaign=FODL\_course)  
 to this question.

ge?  
 nt it out. The format is terrible and print friendly.

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There are many extensions available for browsers which will do this job.

Best!

Ankit Gupta


**JACK MA**
[Reply](#)

[January 10, 2017 at 2:49 pm \(https://www.analyticsvidhya.com/blog/2017/01/46-questions-on-sql-to-test-a-data-science-professional-skilltest-solution/#comment-120825\)](https://www.analyticsvidhya.com/blog/2017/01/46-questions-on-sql-to-test-a-data-science-professional-skilltest-solution/#comment-120825)

Thank you.

I do find one extension called print friendly&pdf. It is much better.

**HUNAIDKHAN PATHAN (HTTP://NONE)**[Reply](#)[January 10, 2017 at 2:43 pm \(<https://www.analyticsvidhya.com/blog/2017/01/46-questions-on-sql-to-test-a-data-science-professional-skilltest-solution/#comment-120824>\)](https://www.analyticsvidhya.com/blog/2017/01/46-questions-on-sql-to-test-a-data-science-professional-skilltest-solution/#comment-120824)


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20824)

it click on any of the page you want and click on print -> it does also google chrome allows to save the page as PDF .

[\(https://courses.analyticsvidhya.com/courses/fundamentals-](https://courses.analyticsvidhya.com/courses/fundamentals-of-deep-learning/)[of-deep-learning/?\) But the original print is not that good for some article, there has some overlap. But i use](https://courses.analyticsvidhya.com/courses/fundamentals-of-deep-learning/)[isplay&utm\\_campaign=FODL\\_course\)](https://courses.analyticsvidhya.com/courses/fundamentals-of-deep-learning/)


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Really good explanation...

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Hi Pushpita,

Thanks for your positive feedback.

Best!

Ankit

**ANKIT SABINKAR**[Reply](#)[January 11, 2017 at 10:59 am \(<https://www.analyticsvidhya.com/blog/2017/01/46-questions-on-sql-to-test-a-data-science-professional-skilltest-solution/#comment-120868>\)](https://www.analyticsvidhya.com/blog/2017/01/46-questions-on-sql-to-test-a-data-science-professional-skilltest-solution/#comment-120868)

This was my first Hackathon and I really enjoy it.

Lot more to come in future.

AV Team is doing an amazing job. Thank you !!!



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[/analyticsvidhya.com/blog/2017/01/46-questions-on-sql-to-test-a-data-science-20870\)](https://www.analyticsvidhya.com/blog/2017/01/46-questions-on-sql-to-test-a-data-science-20870))

Regards,  
Ankit  
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a bank of question/answers for quizzes in an academic

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Hi Mario,

I am glad that you found this article useful. Please contact Kunal, in case you want to re-use this Skilltest.  
[kunal.jain@analyticsvidhya.com](mailto:kunal.jain@analyticsvidhya.com) (<mailto:kunal.jain@analyticsvidhya.com>).

Regards,  
Ankit



**MOHAMED HINDAM**

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[March 15, 2018 at 12:18 pm \(https://www.analyticsvidhya.com/blog/2017/01/46-questions-on-sql-to-test-a-data-science-utm\\_source=professional-skills-test-solution/#comment-151910\)](https://www.analyticsvidhya.com/blog/2017/01/46-questions-on-sql-to-test-a-data-science-utm_source=professional-skills-test-solution/#comment-151910)

Q10 : ANSWER SHOULD BE THE CORRECT ANSWER IS (B)

because in the question he changed the order of two tables around LEFT, if LEFT in one query and the other is right so they will be the same.



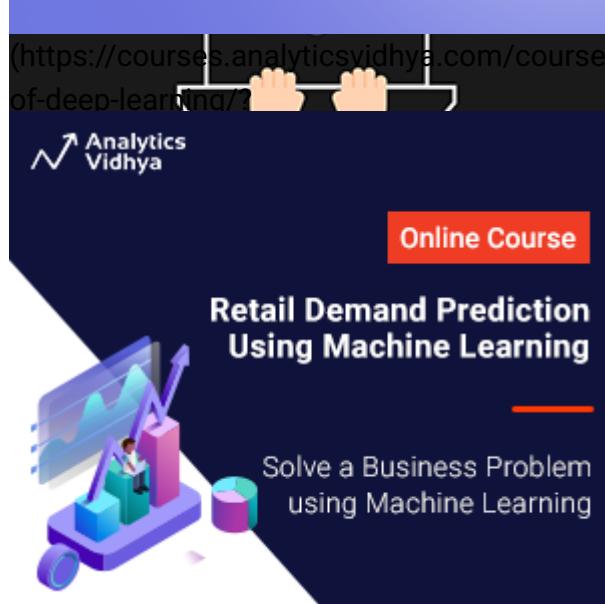
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