# Working with Data using SQL Interview Questions

PIERIAN DATA

# Data Science Career Guide

- In almost every data science interview you will be tested in your knowledge of basic SQL.
- Typically this is done to test that you know SQL, not a test to check how advanced you are in it.

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- We'll start off with some simpler questions then move on to harder ones.
- Take careful notice of job postings that require a particular syntax of SQL.
- Our questions will be relatable to any major SQL Engine.

# Let’s get started!

# SQL
# Interview Question 1

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- What is wrong with this query?

```
SELECT Id, YEAR(TrialDate) AS TrialYear

FROM Payments

WHERE TrialYear <= 2015;
```

# SQL
# Interview Question 2

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- What is wrong with this query?

```
SELECT Id, TrialDate

FROM Payments

GROUP BY Id;
```

# SQL
# Interview Question 3

# Data Science Career Guide

- What is wrong with this query?

```
SELECT UserId, AVG(Total) AS AvgOrderTotal

FROM Invoices

HAVING COUNT(OrderId) >= 1
```

# SQL
# Interview Question 4

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Consider the two tables below.

**Employees**

| Id | Name | ManagedBy |
|---|---|---|
| 1 | Jane Doe | NULL |
| 2 | Mark Smith | 1 |
| 3 | Sally Rogers | 3 |

**Managers**

| Id | Name |
|---|---|
| 1 | Zach Allen |
| 2 | Bill Lee |
| 3 | Sandy Kim |

Write a query that retrieves all employees managed by Sandy Kim.

# SQL
# Interview Question 5

# Data Science Career Guide

Consider the two tables below.

**Employees**

| Id | Name | ManagedBy |
|---|---|---|
| 1 | Jane Doe | NULL |
| 2 | Mark Smith | 1 |
| 3 | Sally Rogers | 3 |

**Managers**

| Id | Name |
|---|---|
| 1 | Zach Allen |
| 2 | Bill Lee |
| 3 | Sandy Kim |

Write a query that retrieves all employees that have no manager.

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- Write a query that retrieves all employees that have no manager.

# SOLUTIONS

# SOLUTIONS ARE UP NEXT!

# Solution for SQL Interview Question 1

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- What is wrong with this query?

```
SELECT Id, YEAR(TrialDate) AS TrialYear

FROM Payments

WHERE TrialYear <= 2015;
```

TrialYear will be assigned as the end, so you won't be able to use it as a filter on WHERE.

Instead you should use:

```
WHERE YEAR(TrialDate) <= 2015
```

# Solution for SQL Interview Question 2

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- What is wrong with this query?

```
SELECT Id, TrialDate

FROM Payments

GROUP BY Id;
```

There was no aggregate function on the TrialDate column. There needs to be an aggregate function, otherwise the column should also be in the GROUP BY statement.

# Solution for SQL Interview Question 3

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- What is wrong with this query?

```
SELECT UserId, AVG(Total) AS AvgOrderTotal

FROM Invoices

HAVING COUNT(OrderId) >= 1
```

Note the use of HAVING and the AVG function. There was no GROUP BY statement to accompany those statements, in other words, the SQL statement was missing.

# Solution for SQL Interview Question 4

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Consider the two tables below.

**Employees**

| Id | Name | ManagedBy |
|---|---|---|
| 1 | Jane Doe | NULL |
| 2 | Mark Smith | 1 |
| 3 | Sally Rogers | 3 |

**Managers**

| Id | Name |
|---|---|
| 1 | Zach Allen |
| 2 | Bill Lee |
| 3 | Sandy Kim |

Write a query that retrieves all employees managed by Sandy Kim.

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```
SELECT Name FROM Employees
WHERE ManagedBy = 3
```

```
SELECT Employees.Name FROM Employees
JOIN Managers ON
Employees.ManagedBy = Managers.Id
WHERE Managers.Name LIKE “Sandy Kim”
```

# Solution for SQL Interview Question 5

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Consider the two tables below.

**Employees**

| Id | Name | ManagedBy |
|---|---|---|
| 1 | Jane Doe | NULL |
| 2 | Mark Smith | 1 |
| 3 | Sally Rogers | 3 |

**Managers**

| Id | Name |
|---|---|
| 1 | Zach Allen |
| 2 | Bill Lee |
| 3 | Sandy Kim |

Write a query that retrieves all employees that have no manager.

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- Write a query that retrieves all employees that have no manager.

```
SELECT Name FROM Employees
WHERE ManagedBy Is Null
```