1Nebula – Junior Software Support Engineer Assessment 2023

The following assessment consists of two(2) parts:

- Scenarios
- SQL Queries

Please complete each question as best as you can with completeness as a priority.

Scenarios

This section focuses on everyday scenarios that you might encounter in the role.

Each scenario can be either standalone or have multiple extensions to address different types of situations. You can assume that each extension is exclusive to one another **UNLESS** specified otherwise.

Remember the goal is to find the solution in the most effective and efficient manner by using any resources available to you (fellow colleagues, documentation etc.)

Keep in mind priority shifts, line of command, communication, and feedback.

Points are scored on how the situation will be handled.

Scenario 1: "Things happen"

While you are on the job, an urgent Service Request ticket arrives. The request states that: An important data import had failed and needs to be investigated urgently as it is Client facing data. You investigate the issue and find…

Scenario extension 1A:

…that you have the knowledge and skill to address the issue.

1A: Please list the steps (in order) that you would take with a short motivation for each.

Scenario extension 1B:

…that you **do not** have the knowledge and skill to address the issue.

1B.   Please list the steps (in order) that you would take with a short motivation for each.

Scenario 2: "Action is key, but order is effective"

You received an Alert via one of the communication pipelines stating the company website is down.

2.1   What should be your first action after reading this alert?

2.1   After taking your first action, what happens next?

Scenario 3: "It's always urgent"

A Query ticket arrives on your desk. A website user claims the report they are trying to run is not working as expected. See snippet below:

> Hi Support,
>
> The report I am trying to run on *company website* is not working. Please investigate urgently!
>
> Regards,

3.1   What course of action would be best to take?

3.2   Provide a potential reply you would send back to the requesting user (Use Italics for generic variables. Example: Hi *user*)

Scenario extension 3A:
After first investigation, you determine that incorrect report parameters were used, and thus incorrect data was returned.

3A.1   Provide a potential reply you would send back to the requesting user (Use Italics for generic variables. Example: Hi *user*)

Scenario extension 3B:
After first investigation, you determine that the report does indeed not work as expected and even sometimes throws an error or just times out while still running.

3B.1   Please provide steps to address the situation.

3B.2   Provide motivation on how you would determine the priority of this user request.

Scenario Priorities 4:
Arrange your list of priorities from most import to least important if multiple was taking place at the same time:

4.1   Scenario 1A and 3A

4.2   Scenario 1B and 2

4.3   Scenario 1B, 2 and 3B

4.4   Scenario 2 and 3A and the CEO of the company calls you personally requesting assistance with his login process.

Structured Query Language (SQL)
SQL is a very crucial skill in this role. Understanding how it can be utilised to automate, optimise and improve everyday tasks will be extremely advantages.

This section will focus on Simple SQL Queries you will encounter in this role.

Query 1:

1.1   Given the table [Users]. Write a SQL query that will retrieve all columns and the first 800 rows from the table.

1.2   Now given in the same table there is a column called "DateAdded". Adjust your query to have the most recently added users on top.

1.3   You notice that this table contains a lot of meta data which is not relevant to your search. Adjust your query to only retrieve the columns: Name, Surname, FullName and DateAdded.

1.4   You are curious to know if there are any existing users with the same name as yourself. Adjust your query to find all users with the same name as your own.

Query 2:

2.1   Given the table [Customers]. Write a SQL query that will retrieve Columns: Name, Surname, ClientName, DateAdded and DateUpdated from the table.

2.2   You receive a Service request from a customer who would like her Surname to be updated since she got married recently. Given her name is "Monica Geller", adjust your query to find only her record.

2.3   Now write an Update query to change her Surname to "Geller-Bing"

2.4   Another service request arrives on your desk. A customer by the name "Lufuno Tshishonga" has been transferred to work at a different client. Given the ClientName is "CompanyX", write a new query to retrieve only the relevant record.

2.5   Now write an Update query to change ClientName to "CompanyY"

Query 3:

3.1   Given the table [Transactions]. Write a SQL query that will retrieve Columns: TransactionID, CustomerID, Amount, DateAdded and DateUpdated from the table.

3.2   You receive a Service Request from a customer stating they have accidentally added incorrect data to this table. Four(4) records was added for customer with ID 1042 today. No other data was added yet. Adjust your query to find the relevant records.

3.3   Now write a Delete query to permanently remove these records from the table.

3.4   The customer continues the request to now add the correct data since you are the SQL expert. Create 4 new records in [Transactions] with the following data:

TransactionID	Amount
2081	R751.21
2082	R545.50
2083	R8080.50
2084	R741.1

3.5   Now write a new query that will retrieve only the newly added records from above to provide evidence to the customer that the request was done.

3.6   Now seeing you can do this, the customer requests to see the total transaction amounts for each customer that took place in the current month. Write a query that will satisfy this request.

Query 4:

4.1   Given both tables [Customers] and [Transactions]. Write a query that will join these table together. The result should bring back matching records in both tables.

4.2   Adjust your query above to now bring back all customers whether they have transactions linked to them or not