## **Case Study and Questionnaire for Data Analyst Role**

### **Instructions**

1. **Make a copy of this document**
2. **Fill the Questionnaire**
3. **Answer the case study**
4. **Submit to** [**vishal@optiblack.com**](mailto:vishal@optiblack.com) **with Subject {{YourName}} - Data Analyst - Response**

**Q. What experience do you have in data analysis, and how have you applied it to drive business decisions?**

**Ans:**  I am Radheshyam, a certified data analyst by iNeuron (PW Skills) and postgraduate from NIT Trichy with 7 months of experience in the field of Sale management with main concentration on report, data analysis and visualization using data-driven tools and techniques like Google Data Studio, PowerBI and MS Offices & Skilled in MySQL, Python, Snowflake, PowerBI, Tableau and Machine Learning. I used all these skills to generate deep insights through statistical analysis and visualization for business decision from raw data.

**Q. What experience do you have in data visualization and which tools have you used?**

**Ans:** Data visualization is the process of displaying data and information in a graphical or visual format to help people understand and interpret the data more easily. I have used google data studio and power BI for dashboard, and Pandas with Matplotlib library for high-quality, customized plots and graph.

**Q. Can you describe your experience with SQL and other programming languages?**

**Ans:** SQL (Structured Query Language) is a programming language used for managing and manipulating relational databases. I have knowledge about MySQL, a relational database management system which can be used for creating database, manipulation and selection using SQL. Other than this, I have knowledge of python programming language and its library, and MATLAB.

**Q. How have you used KPIs to measure the effectiveness of business decisions, and which KPIs do you consider most important for driving business growth?**

**Ans:** Key Performance Indicators (KPIs) are used to measure the effectiveness of business decisions by tracking and monitoring specific metrics that relate to the goals and objectives of the organization. I had used these KPIs like Total sales per day, sales by region, percentage achievement, performance of regional managers, revenue increment etc. KPIs depends on goal and objectives of the organization but the most important KPIs for driving business growth are Revenue growth, customer acquisition cost customer engagement rate, and employee performance.

**Q. Can you give an example of a complex data analysis project you have undertaken, and how did you approach it?**

**Ans:** My previous company was a startup so the main challenge was raw data gathering and cleaning for analysis and dashboard but my experience and skills like python can easily solve this challenge. Pandas is a python library which provide a wide range of function and methods for performing data manipulation and analysis tasks easily.

**Q. How do you stay up to date with industry trends and best practices in data analysis and visualization?**

**Ans:** Staying up to date with industry trends and best practices in data analysis and visualization is essential for professionals in this field. I stay update through Participate in online courses and tutorials and reading blogs. Here are some other ways to stay update like Conference & workshop, professional society, collaboration with peers etc.

**Q. Can you describe your experience with A/B testing, and how have you used it to drive business decisions?**

**Ans:** A/B testing is a statistical hypothetical method used to compare two or more versions of a web page, email, advertisement, or other digital content to determine which one performs better in terms of achieving a specific goal, such as increasing click-through rates, conversion rates, or revenue. I had use A/B testing, for ease of id creation of FSEs which was causing more time consumption for starting work by FSEs.

**Q. How do you ensure data quality and accuracy in your analysis and which techniques have you used in the past?**

**Ans:** Data quality and accuracy are critical to the success of any data analysis. some techniques that I have used to ensure data quality and accuracy are data cleaning by pandas’ library, data validation using statical method.

**Q. Can you give an example of how you have collaborated with cross-functional teams to drive business growth using data analysis?**

**Ans:** My previous company’ challenge was the conversion rate of FSEs from training to work which was very less because of id creation took two to three days and was complex process. So I discussed with all regional manager and clients regarding this. After that we made modification and check the conversion rate through sales per day per heads and found the best method from comparing previous methods.

**Case Study: Customer Churn Analysis**

**You have been tasked with analysing customer churn for Shipyaari. The goal of this analysis is to identify the factors that contribute to customer churn and develop strategies to reduce churn rate. You have been provided with a dataset containing information about Shipyaari’s customers, including their demographics, transaction history, and customer support interactions.**

**Task:**

**1. Perform EDA (exploratory data analysis) to identify patterns and insights in the data that could be related to customer churn.**

**2. Develop a predictive model to forecast customer churn rate for the next quarter.**

**3. Identify the key drivers of customer churn and provide recommendations to reduce the churn rate.**

**4. Present your findings to the senior management team at Shipyaari.**

**Data:**

**Create a dataset that contains the following fields:**

**1. Customer ID: unique identifier for each customer**

**2. Gender: customer’s gender**

**3. Age: customer’s age**

**4. Income: customer’s income level**

**5. Transaction count: number of transactions made by the customer**

**6. Last transaction date: date of the customer’s last transaction**

**7. Customer support interactions: number of times the customer has contacted customer support**

**8. Order fulfilment rate: percentage of orders fulfilled on time for the customer**

**9. Churn: whether the customer has churned (1) or not (0)**