DATA ANALYST Assignment-1

SECTION 1: Core Concepts

Q1. Define in your own words

1. Data

Data is a collection of raw facts or set of values of qualitative/quantitative.

Data is classified into three types,

i. Structured Data
ii. Semi-Structured Data
iii. Unstructured Data

Example:
Marks scored by students such as 78, 85, 92 stored in a school database.

2. Data Analytics

Data analytics is the process of examining the data or studying data to find patterns, trends, and answers that help businesses make better decisions.

Example:
Analyzing customer purchase history to understand which product sells the most.

3.Difference between Data and Information

Data	Information
Raw and unprocessed	Processed and meaningful
No direct decision value	Used for decision-making

Example:

Data: Daily sales numbers

Information: “Sales dropped by 20% this week compared to last week”

Q2. Why companies invest heavily in data analytics

1. Better decision making
   Example: Amazon uses data to decide where to build new warehouses.
2. Cost reduction
   Example: Amazon uses data to reduce product returns and delivery costs.
3. Improved customer experience
   Example: Amazon personalizes product recommendations.
4. Predict future trends
   Example: Amazon predicts which products will sell more during festival seasons.
5. Competitive advantage
   Example: Amazon changes product prices using data to stay ahead of competitors.

SECTION 2: Types of Data

Q3. Identify type and nature of data

Scenario	**Type of Data**	**Nature**
Customer age	Structure	Quantitative
Netflix movie review text	Unstructured	Qualitative

Bank transaction table	Structure	Quantitative
Uber GPS coordinates	Semi-Structure	Quantitative
Amazon product ratings (1–5)	Structure	Quantitative

Q4. Convert unstructured data into structured form

Given text:

"The delivery was late and customer support was poor."

feedback_text	**Sentiment**	**issue_type**
The delivery was late and customer support was poor	Negative	Delivery & Support

SECTION 3: Analytics Types Mapping

Q5. Match business question to analytics type

Business Question	**Analytics Type**
Why are users uninstalling our app?	Diagnostic
How many users logged in yesterday?	Descriptive
What will next month's revenue be?	Predictive
Which action should reduce churn?	Prescriptive

SECTION 4: Industry Use-Case Deep Dive

Chosen Company: Amazon

Type of Data	Business Objective
Customer profile data (age, location, preferences)	Personalize shopping experience
Browsing & search history	Improve product recommendations
Purchase & order history	Demand forecasting & inventory planning
Product ratings & reviews	Improve product quality & trust
Delivery & logistics data	Optimize delivery speed and cost

Q7. Analytics Use Cases for Amazon

1. Descriptive Analytics

- **Business Problem:** What products are selling the most?
- **Data Used:** Sales and order history
- **Expected Output:** Top-selling products and categories
- **Business Value:** Helps understand current sales performance

2. Diagnostic Analytics

- **Business Problem:** Why did sales drop for a product?
- **Data Used:** Pricing data, reviews, competitor pricing, stock availability
- **Expected Output:** Reasons for sales decline (price increase, bad reviews, out-of-stock)
- **Business Value:** Identify and fix issues quickly

3. Predictive Analytics

- **Business Problem:** What products will be in high demand next month?
- **Data Used:** Past sales trends, seasonal data, customer behaviour.
- **Expected Output:** Demand forecast
- **Business Value:** Prevent stock shortages and reduce overstock

4. Prescriptive Analytics

- **Business Problem:** How to increase product sales?
- **Data Used:** Customer behaviour, pricing data, promotion history
- **Expected Output:** Recommended discounts, ads, and bundle offers.
- **Business Value:** Increase revenue and customer satisfaction

SECTION 5: Analyst Thinking Test

Q8. Situation: “Company revenue is falling.”

1. Questions I will ask first

- From when did the revenue start falling?
- Is the drop happening in all products or only specific ones?
- Is it affecting all regions or only certain locations?
- Has customer count reduced or are customers spending less?
- Were there any recent changes in price, offers, or competitors

2. Data I will request

- Monthly and yearly sales data
- Product-wise and region-wise revenue data
- Customer purchase and churn data
- Pricing and discount history
- Marketing campaign performance data

3. Metrics I will analyze

- Revenue growth rate
- Number of active customers
- Customer churn rate
- Average order value
- Conversion rate

SECTION 6: Insight Communication

Q9. What data analytics is and why it matters to the business?

- Data analytics helps a company understand what is happening in the business using data.
- It converts raw numbers into clear insights that support decision-making.
- Analytics helps identify problems early and find opportunities for growth.
- It improves customer satisfaction and reduces unnecessary costs.
- In today's competitive market, data analytics is essential for long-term business success**.**