

1. PORTFOLIO DATA ANALYSIS

DOMAIN

Risk Management

PROBLEM STATEMENT

As an analyst, you need to advise your client to decide which mutual fund risk category should invest in.

TOPIC

Descriptive Analytics, Distributions, and Visualization

2. EFFECTIVENESS OF PRODUCTION PROCESS

DOMAIN

Manufacturing/Inventory Management

PROBLEM STATEMENT

As a manager/supervisor of a company, you need to measure the effectiveness of the production of cereal boxes. The aim is to analyze whether or not the cereal boxes' weight is as per company specifications.

TOPIC

Descriptive Analytics, Distributions, and Visualization

3. PRODUCT ASSORTMENT STRATEGIES IN RETAIL STORE

DOMAIN

Marketing/Retail

PROBLEM STATEMENT

As a regional sales manager of a company, you need to analyze the mean sales comparison between two types of displays of products in the retail store. The aim is to decide whether or not the Promotional display of the product is more effective than the Normal display of the product. This helps management to decide the display location of the product in a store that will maximize sales.

TOPIC

Hypothesis Testing (Two-Sample tests)

4. DRUG ANALYSIS

DOMAIN

Clinical

PROBLEM STATEMENT

Before you launch the new drug on the market, you need to analyze the effect of the new drug and its different doses on the blood pressure of the human body.

TOPIC

Analysis of Variance (ANOVA Models)

5. ANALYZING CONSUMPTION OF OXYGEN IN THE HUMAN BODY DURING RUNNING

DOMAIN

Physiology

PROBLEM STATEMENT

In exercise physiology, an objective measure of aerobic fitness is how effectively the body can absorb and use oxygen during its 1.5 miles run. Factors affecting oxygen consumption are runtime, age, and gender, run pulse, rest pulse, and so on. The aim is to identify the key factors affecting oxygen consumption during a run.

TOPIC

Analysis of Variance (EDA and Linear Regression Models)

6. TITANIC EVENT ANALYSIS

DOMAIN

Event Analysis

PROBLEM STATEMENT

On the 14th of April, the Titanic hit an iceberg and sank. There were 1517 fatalities from different age groups, classes (1, 2, and 3), and gender. The objective is to measure how all these factors are associated with the survival status of passengers.

TOPIC

Odds, Odds Ratio, Chi-Square tests, Ordinal-associations, and Logistic Regression Model

7. MARKETING CAMPAIGN FOR A BANK

DOMAIN

Marketing

PROBLEM STATEMENT

A target marketing campaign for a bank was undertaken to identify a segment of customers who are likely to respond to an insurance product. Here, the target variable is whether or not the customers bought insurance products and it depends on factors like Product usage in three months, demographics, transaction patterns as like deposit amount, checking account, a branch of the bank, Residential information (like urban, rural) and so on.

TOPIC

Classification, Categorical Data Analysis, Logistic regression, Decision Tree and Gradient Boosting (XGBOOST)

8. FORECAST THE REVENUES OF THREE COMPANIES

DOMAIN

Financial Analyst

PROBLEM STATEMENT

Forecast the revenues of three companies (Eastman Kodak, Cabot Corporation, and Wal-Mart) in order to better evaluate investment opportunities for your client.

TOPIC

Odds, Odds Ratio, Chi-Square tests, Ordinal-associations, and Logistic Regression Model

9. MONEY SUPPLY & INTEREST RATES

DOMAIN

Economist

PROBLEM STATEMENT

Is it Money Supply that “causes” the interest rates OR Interest rates that “causes” the Money Supply

TOPIC

Vector Autoregression (VAR) Model

10. FORECASTING FOR U.S./U.K. EXCHANGE RATES

DOMAIN

Economist

PROBLEM STATEMENT

Volatility Forecasting for U.S./U.K. exchange rates

TOPIC

Autoregressive Conditional Heteroskedasticity (ARCH) and Generalized Autoregressive Conditional Heteroskedasticity (GARCH) Model

11. FORECASTING OF BITCOIN PRICES

DOMAIN

Financial Analyst

**PROBLEM
STATEMENT**

Long-Term forecasting of BitCoin prices

TOPIC

Long-Short Term Memory (LSTM) Model