Getting started with Data and Business Analytics

Table of Contents

Course Description:

This comprehensive 3-day training program on Data and Business Analytics provides participants with the skills and knowledge required to harness the power of data to drive business decisions. The course covers essential concepts, tools, and techniques in data analysis, visualization, and business intelligence. Participants will engage in hands-on exercises, case studies, and real-world examples to solidify their understanding and application of data analytics in a business context.

Course Objectives:

- Understand the fundamental concepts of data and business analytics.
- Learn to collect, clean, and preprocess data for analysis.
- Gain proficiency in data visualization techniques and tools.
- Develop skills in statistical analysis and predictive modeling.
- Apply business intelligence tools to generate insights and inform decision-making.
- Implement data-driven strategies to solve business problems.
- Explore advanced analytics techniques, including machine learning and AI.

Audience:

- Business analysts and data analysts
- Data scientists and data engineers
- IT professionals and software developers
- Business managers and decision-makers
- Anyone interested in gaining skills in data and business analytics

Prerequisites:

- Basic understanding of statistics and mathematics
- Familiarity with Excel or other spreadsheet software
- Basic programming knowledge (preferably in Python or R) is beneficial but not required

Duration:

- 3 days (24 hours total, with 8 hours per day)

Course Topics:

Day 1: Introduction to Data and Business Analytics

Module 1: Welcome and Course Overview

- Introduction to the course
- Objectives and expectations

Module 2: Introduction to Data Analytics

- What is data analytics?
- Importance and applications in business

Module 3: Data Collection and Preprocessing

- Data sources and types
- Data cleaning and preprocessing techniques
- Hands-on exercise: Cleaning and preprocessing a sample dataset

Module 4: Exploratory Data Analysis (EDA)

- Descriptive statistics
- Data visualization techniques
- Tools: Excel, Python (Pandas, Matplotlib), R (ggplot2)
- Hands-on exercise: Performing EDA on a sample dataset

Module 5: Introduction to Business Intelligence (BI)

- Overview of BI tools and platforms
- Case study: Implementing BI in a business context

Day 2: Data Visualization and Statistical Analysis

Module 6: Advanced Data Visualization

- Principles of effective data visualization
- Tools: Tableau, Power BI
- Hands-on exercise: Creating interactive dashboards

Module 7: Statistical Analysis for Business

- Inferential statistics
- Hypothesis testing
- Regression analysis
- Hands-on exercise: Conducting statistical analysis on a business dataset

Module 8: Predictive Analytics and Modeling

- Introduction to predictive analytics
- Common predictive modeling techniques (e.g., linear regression, decision trees)
- Hands-on exercise: Building a predictive model

Module 9: Case Study: Predictive Analytics in Action

- Real-world example of predictive analytics
- Discussion and analysis of results

Day 3: Advanced Analytics and Applications

Module 10: Machine Learning for Business Analytics

- Introduction to machine learning concepts
- Supervised vs. unsupervised learning
- Popular algorithms and their applications
- Hands-on exercise: Implementing a simple machine learning model

Module 11: AI and Advanced Analytics

- Overview of AI and its impact on business analytics
- Case study: AI applications in business

Module 12: Big Data and Cloud Analytics

- Understanding Big Data concepts
- Tools and technologies for Big Data analytics
- Cloud platforms for data analytics (e.g., AWS, Google Cloud, Azure)

Module 13: Ethics and Data Governance

- Ethical considerations in data analytics
- Data privacy and security

- Principles of data governance

Module 14: Data-Driven Decision Making

- Leveraging analytics for strategic decisions
- Communicating insights effectively to stakeholders
- Hands-on exercise: Presenting data-driven recommendations