

Data Analytics

Job-Ready Program

Course Objective

The **Data Analytics Job Ready Program** is designed to equip participants with the essential skills, tools, and knowledge required to excel in data analytics roles. This program focuses on practical, hands-on learning to ensure participants are prepared to solve real-world business challenges using data.

By the end of the course, participants will:

i. **Develop Proficiency in Essential Tools:**

- ❖ Master data analysis and management using **Excel** and **Google Sheets** for efficient handling of large datasets and creating insightful reports.
- ❖ Design interactive dashboards and visualizations using **Power BI** and **Looker Studio** for business intelligence and decision-making.

ii. Learn Database Management and Querying:

- ❖ Understand the fundamentals of **SQL**, including writing and optimizing queries to extract meaningful insights from databases.

iii. Acquire Programming Skills for Data Analysis:

- ❖ Harness the power of **Python** with libraries like **NumPy** and **Pandas** to clean, process, and analyze data effectively.
- ❖ Create compelling data visualizations using **Matplotlib** and **Seaborn** to tell data-driven stories.

iv. Enhance Analytical and Automation Capabilities:

- ❖ Automate repetitive tasks and reports using Python and other tools to improve efficiency.
- ❖ Gain skills in advanced data manipulation, trend analysis, and predictive modeling.

v. Build Real-World Projects:

- ❖ Apply learned concepts in hands-on projects that simulate real-world scenarios, providing a portfolio to showcase job readiness.

vi. Become Job-Ready:

- ❖ Develop critical problem-solving and communication skills to present data insights effectively.

- ❖ Prepare for interviews and career opportunities in the field of data analytics with confidence.

This program provides a comprehensive learning experience, combining foundational knowledge with practical application, ensuring participants are ready to thrive in data-driven roles.

Module 01: Introduction to Data Analytics

Class 00: Orientation on Data Analytics Bootcamp

□ Overview of Data Analytics

- What is Data Analytics?
- Importance and Applications of Data Analytics in various industries (Finance, Healthcare, Marketing, etc.)
- Different Types of Data Analytics (Descriptive, Diagnostic, Predictive, Prescriptive)

□ Job Roles in Data Analytics

- Data Analyst vs. Data Scientist vs. Data Engineer
- Typical Responsibilities and Expectations in these Roles
- Career Paths and Growth Opportunities in Data Analytics

❑ Our Course Curriculum

- Sharing our course module
- Capstone project
- Career module
- Course completion benefits

❑ Instructors Speech

- Get to know the instructors
- Instructors thought

❑ Students Introduction

- Your introduction
- Interaction with one another

❑ QNAs

- Question and answer session

Class 01: Introduction to Statistics and Data Analytics

❑ Data Analytics Workflow

- Data Collection, Cleaning, and Preprocessing
- Exploratory Data Analysis (EDA)

- Data Visualization
- Data Interpretation and Reporting

□ Introduction to Statistics

- Definition and Types of Data
- Importance of Data in Decision-Making

□ Introduction to Data Types and Sources

- Structured vs. Unstructured Data
- Data Sources: Databases, APIs, Web Scraping, etc.

□ Introduction to Descriptive Statistics

- Importance of Descriptive Statistics in Data Analysis
- Key Statistical Terms: Population, Sample, Variables (Categorical vs. Numerical)

□ Measures of Central Tendency and Dispersion

- Mean, Median, Mode
- Range, Variance, Standard Deviation
- Interquartile Range (IQR)

□ Key Tools and Technologies in Data Analytics

- Spreadsheets (Excel, Google Sheets)

- Business Intelligence Tools (Power BI, Looker)
- Programming Languages (Python, SQL)

Module 02: Spreadsheet Tools

Class 02: Introduction to Excel

Overview of Excel

- Definition and key features

Navigating the Excel interface

- Ribbon, Toolbar, Worksheet

Basic Operations of Excel

- Creating and saving workbooks
- Entering and editing data

Basic formatting in Excel

- Font and alignment
- Number formats

□ Introduction to Data Visualization in Excel

- How Visualization Enhances Data Understanding
- Overview of Basic Charts

□ Real World Example

- Interactive Analytical Dashboard

Class 03: Formulas and Functions in Excel

□ Basic Formulas and Functions

- Understanding and Creating Formulas
- Common Functions
- Using the AutoSum Feature

□ Text Functions

- String Manipulation
- Text Formatting
- Search and Replace

□ Date and Time Functions

- Current Date and Time
- Date and Time Components
- Date Calculations

□ Logical Functions

- Logical Operations

Excel Productivity Features

- AutoFill and Flash Fill
- Working with Lists and Series
- Importing Data

Class 04: Data Manipulation and Management in Excel

Basic Error Checking and Troubleshooting

- Identify and resolve common formula errors.

Data Manipulation

- Inserting (Column & Row)
- Naming (Column & Row)
- Changing data types
- Grouping
- Pivoting
- Transposing
- Sorting
- Filtering

Class 05: Data Integrity and Management

Data Validation

- Data Validation Rules

- Drop-Down Lists
- Handling Errors

□ Working with Tables

- Excel Tables
- Formatting Tables
- Managing Table Data
- Structured References

Class 06: Advanced Excel Techniques

□ Conditional Formatting

- Applying Basic Conditional Formatting Rules
- Using Color Scales, Data Bars, and Icon Sets
- Creating Custom Conditional Formatting Rules

□ PivotTables

- Creating and Customizing PivotTables
- Grouping Data in PivotTables
- Using Calculated Fields and Items

□ Analysis

- Using Goal Seek
- Setting Up and Using Data Tables

- Introduction to Scenario Manager

Class 07: Data Visualization and Dashboard Design

□ Creating Charts

- Types of Charts
- Creating and Customizing Charts
- Adding Data Labels, Titles, and Legends

□ Advanced Charting Techniques

- Creating Combo Charts
- Using Sparklines for Mini-Charts
- Creating Dynamic Charts with Named Ranges

□ Dashboard Design

- Principles of Effective Dashboard Design
- Creating Interactive Dashboards Using Slicers and Timelines
- Linking Charts and Tables for Dynamic Updates

Class 08: Google Sheets

□ Introduction to Google Sheets

- Overview of Google Sheets Interface

- Differences between Google Sheets and Excel
- Collaboration and Sharing Features
- Cloud Integration and Real-Time Editing

□ Basic Operations

- Creating and Organizing Sheets
- Entering and Formatting Data
- Copying, Pasting, and Using Fill Handle
- Managing Rows, Columns, and Sheets

□ Essential Functions and Formulas

- Basic Arithmetic Functions (SUM, AVERAGE, COUNT, MIN, MAX)
- Text Functions (CONCATENATE, LEFT, RIGHT, MID)
- Logical Functions (IF, AND, OR)
- Date and Time Functions (TODAY, NOW, DATE)

□ Data Manipulation and Analysis

- Sorting and Filtering Data
- Using Conditional Formatting
- Data Validation and Drop-Down Lists
- Importing and Exporting Data

Intermediate Functions and Tools

- VLOOKUP and HLOOKUP
- Pivot Tables
- Array Formulas
- Using Scripts and Add-ons for Advanced Functionality

Basic Charts and Graphs

- Creating Bar, Line, and Pie Charts
- Customizing Chart Appearance
- Interpreting Data through Visualization



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Class 09: Practical Interactive Dashboard Projects

- Project-01:** Practical Hands-on Interactive Dashboard Project on Excel
- Project-02:** Practical Project by Students

Module 03: Business Intelligence Tools

Class 10: Introduction to Data Analytics with Power BI

Overview of Data Analytics

- Definition and importance of data analytics

- Key concepts: data types, data sources, and data lifecycle
- Applications in various industries

□ **Introduction to Power BI**

- What is Power BI? Overview and components
- Installing and setting up Power BI Desktop
- Overview of the Power BI interface and navigation

□ **Data Sources and Collection Methods**

- Identifying relevant data sources
- Methods of data collection

□ **Importing Data into Power BI**

- Connecting to various data sources
- Overview of connectors and integration
- Initial data load and basic transformations

Class 11: Data Preprocessing and Transformation

□ **Data Quality and Preparation**

- Importance of data cleaning
- Common data quality issues

□ **Data Cleaning Techniques**

- Using Power Query Editor for data cleaning
- Handling missing data, removing duplicates, and correcting errors
- Transforming data types and formatting

Advanced Data Transformations

- Splitting and merging columns
- Pivoting and unpivoting data
- Grouping and summarizing data

Data Shaping for Analysis

- Creating calculated columns
- Using conditional columns and custom functions
- Managing and reordering applied steps

Class 12: Data Modeling and Relationships

Building a Data Model

- Importance of data modeling
- Star schema vs. snowflake schema

Creating Relationships

- Establishing relationships between tables
- Managing relationship properties

Advanced Modeling Concepts

- Creating and using calculated tables
- Implementing role-playing dimensions

DAX Basics

- Understanding DAX syntax and basic functions
- Creating simple measures and calculated columns

Class 13: DAX (Data Analysis Expressions)

□ Charts and Intermediate DAX

- Types of charts in Power BI
- Charts customization
- Intermediate DAX in charts

□ Common DAX Functions

- Aggregation functions
- Logical functions
- Date and time functions

□ Advanced DAX Techniques

- Understanding context
- Using CALCULATE and FILTER functions
- Creating time intelligence measures

Class 14: Data Visualization Techniques

□ Creating Visuals in Power BI

- Overview of visual types
- Creating and customizing visuals
- Best practices for effective data visualization

□ Advanced Visualizations

- Using slicers and filters for interactive reports
- Setting up visual interactions and drill-through
- Creating advanced visuals

Class 15: Power BI Reporting, Sharing, and Collaboration

□ Creating Reports and Dashboards

- Difference between Reports and Dashboards
- Assembling multiple visuals into a cohesive report
- Creating interactive and dynamic dashboards

□ Power BI Service

- Overview of Power BI Service (cloud-based platform)
- Publishing reports from Power BI Desktop to the Service
- Setting up data refresh schedules for live reports

□ Collaboration and Sharing

- Sharing reports and dashboards with colleagues
- Setting permissions and access levels
- Collaborating on reports in real-time

□ Power BI Mobile

- Creating mobile-optimized reports
- Viewing and interacting with reports on mobile devices

□ Embedding and Integrating Reports

- Embedding Power BI reports in external applications (e.g., SharePoint, Teams, websites)

- Power BI API for custom integrations

□ Best Practices for Reporting and Collaboration

- Organizing workspaces
- Managing versions of reports
- Setting up alerts and notifications for data changes

Class 16: Looker Studio - A Comprehensive Overview

□ Introduction to Looker Studio

- What is Looker Studio, and why use it after mastering Power BI?
- Key differences and similarities between Looker Studio and Power BI
- When to choose Looker Studio for your reporting and visualization needs

□ Looker Studio Interface and Navigation

- Overview of the interface: menus, panels, and layout
- Understanding the report workspace
- Quick tour of the data sources, charts, and fields options

□ Connecting to Data Sources

- Supported data connectors (Google Sheets, Google Analytics, BigQuery, etc.)
- Step-by-step guide to adding and managing data sources
- Data blending: Combining data from multiple sources
- Handling live data vs. static data imports

□ Creating Reports

- Building interactive reports from scratch
- Utilizing Looker Studio's drag-and-drop functionality
- Creating and managing pages in a multi-page report

□ Data Visualization Techniques

- Customizing visuals: colors, fonts, and layout
- Adding calculated fields for advanced reporting
- Using filters and date range controls for dynamic data exploration

□ Advanced Features

- Using calculated fields for custom metrics
- Incorporating dynamic controls (e.g., filters, drop-down menus)
- Data aggregation and summarization techniques

□ Sharing and Collaboration

- Sharing reports with team members or external stakeholders
- Managing permissions for editing and viewing reports
- Embedding reports into websites, Google Slides, and other platforms

Class 17: Projects on Power BI

- Project-03:** Practical hands-on interactive project on Power BI
- Project-04:** Practical project by students on Power BI

Class 18: Projects on Looker Studio/ Power BI

- Project-05:** Practical hands-on interactive project on Google Looker Studio
- Project-06:** Practical project by students on Google Looker Studio

Module 04: Structured Query Language

Class 19: Introduction to SQL and Database

□ Overview of Databases

- Definition and importance of databases
- Types of databases
- Components of a relational database

□ Introduction to SQL

- What is SQL? Overview and history
- SQL standards and dialects
- Setting up a database environment

□ Basic SQL Commands

- Connecting to a database
- Basic structure of SQL statements
- Introduction to SQL syntax

□ Retrieving Data

- Selecting specific columns
- Using aliases for columns and tables
- Performing calculations in SELECT statements

□ Filtering Data

- Basic comparison operators
- Logical operators
- Using BETWEEN, IN, and LIKE for advanced filtering

□ Sorting and Limiting Results

- Sorting data
- Sorting by multiple columns
- Limiting results with LIMIT and OFFSET

Class 20: Data Manipulation and Aggregation

□ Inserting Data

- Basic INSERT statement
- Inserting multiple rows
- Inserting data from another table

□ Updating and Deleting Data

- Basic UPDATE statement
- Updating multiple rows
- Basic DELETE statement
- Deleting multiple rows

□ Window Functions

- Ranking Functions
- Aggregate Functions
- Values Functions

□ Aggregating Data

- Introduction to aggregate functions
- Grouping data
- Filtering groups

Class 21: Joining Tables and Subqueries

❑ Understanding Joins

- Overview of joins and their importance
- Inner join
- Left join, right join, and full outer join
- Cross join and self join

❑ Advanced Join Techniques

- Joining multiple tables
- Using table aliases in joins
- Combining joins with aggregation

❑ Subqueries

- Introduction to subqueries
- Subqueries in SELECT, FROM, WHERE, and HAVING clauses
- Correlated vs. non-correlated subqueries

Class 22: Advanced SQL Techniques

❑ Advanced SQL Functions

- String functions
- Date and time functions
- Conditional expressions

❑ Views and Indexes

- Creating and using views
- Advantages and limitations of views
- Creating and using indexes
- Understanding the impact of indexes on performance

- **Transactions and Data Integrity**
 - Understanding transactions
 - Implementing data integrity with constraints
 - Ensuring ACID properties

Class 23: Practical Projects on SQL

- **Project-07:** Practical hands-on project on SQL
- **Project-08:** Practical hands-on project by Students

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Module 05: Python for Data Analysis

Class 24: Introduction to Python Programming

- **Overview of Python**
 - History and features of Python
 - Applications of Python in various fields
 - Setting up Python
- **Basic Syntax and Operations**
 - Writing and executing Python scripts
 - Understanding the Python syntax
 - Basic data types
 - Variables and assignment
 - Basic arithmetic operations and operators

Class 25: Control Structures and Functions

□ Conditional Statements

- if, elif, else statements
- Comparison operators and logical operators
- Nested conditions

□ Loops

- for loops
- while loops
- loop statements (continue, break, pass)

□ Functions

- Defining and calling functions
- Function arguments and return values
- Scope of variables
- Lambda functions
- User defined function

Class 26: Data Structures

□ Lists

- Creating and accessing lists
- List methods
- List comprehensions

□ Tuples

- Creating and accessing tuples

- Tuple operations
- Tuple methods

□ Dictionaries

- Creating and accessing dictionaries
- Dictionary methods
- Dictionary comprehensions

□ Sets

- Creating and accessing sets
- Set operations
- Set methods

Class 27: File Handling and Exception Management

□ File Handling

- Opening and closing files
- Reading and writing to files
- Using with statement for file operations

□ Exception Handling

- Understanding exceptions and errors
- try, except, else, finally blocks
- Raising exceptions
- Creating custom exceptions

□ Modules

- Importing modules
- Creating and using custom modules
- Understanding the module search path

Module 06: Python Libraries for Data Analysis

Class 28: NumPy and Pandas for Data Analysis

□ Introduction to NumPy and Pandas

- Importance of NumPy and Pandas in data analysis
- Differences between NumPy (numerical data) and Pandas (tabular data)

□ Working with NumPy

- Introduction to NumPy arrays (ndarrays)
- Creating NumPy arrays from lists, tuples, and using arange, zeros, and ones
- Basic array operations (element-wise operations, reshaping, and slicing arrays)
- Common NumPy functions (mean, median, sum, standard deviation, etc.)

□ Introduction to Pandas

- Overview of Pandas data structures: Series and DataFrame
- Importing data into Pandas (CSV, Excel, JSON, etc.)
- Accessing and selecting data using loc and iloc
- Filtering and conditional selection

□ Data Manipulation with Pandas

- Handling missing data: fillna(), dropna(), and isna()
- Adding, modifying, and deleting columns
- Grouping and aggregating data using groupby
- Merging and joining DataFrames (merge(), concat(), join())

□ Basic Data Analysis with NumPy and Pandas

- Descriptive statistics using Pandas (describe(), value_counts())
- Handling categorical data and encoding
- Data sorting, ranking, and reordering

□ Integration and Workflow

- Combining NumPy and Pandas for efficient data manipulation
- Using NumPy functions on Pandas DataFrames

Class 29: Data Visualization with Matplotlib and Seaborn

□ Introduction to Data Visualization

- Importance of data visualization in data analysis
- Overview of Matplotlib and Seaborn libraries

- Differences and use cases for Matplotlib (customization) and Seaborn (statistical plotting)

□ Getting Started with Matplotlib

- Creating basic plots: Line plots, scatter plots, bar charts
- Customizing plots: Titles, labels, legends, and grid
- Working with figure and axes objects (subplots)
- Customizing plot styles, colors, and markers

□ Advanced Plotting with Matplotlib

- Adding annotations and text to plots
- Working with histograms, box plots, and pie charts
- Exporting plots to different formats (PNG, PDF, etc.)

□ Introduction to Seaborn

- Overview of Seaborn's features and functionality
- Creating simple plots: Scatter plots, line plots, bar plots, and box plots
- Customizing Seaborn styles and themes (darkgrid, whitegrid, etc.)

□ Statistical Plots with Seaborn

- Visualizing distributions: distplot(), histplot(), kdeplot()
- Plotting categorical data: countplot(), boxplot(), violinplot()

- Creating regression plots and visualizing relationships (lmplot(), regplot())

□ Combining Matplotlib and Seaborn

- Using Matplotlib functions to customize Seaborn plots
- Creating complex visualizations by combining both libraries

Class 30: Automate Tasks and Reports Using Python

□ Introduction to Automation with Python

- What can you automate with Python?
- Benefits of task automation in data analytics.

□ Automating Email Communication

- Sending automated emails with attachments using libraries like smtplib and email.
- Creating dynamic email content using data from Excel or databases.
- Scheduling email automation with Python scripts.

□ Reading Data from Databases

- Connecting to databases using SQLAlchemy or pyodbc.
- Running queries and fetching data programmatically.
- Automating routine data extraction tasks.

Automating Data Analysis and Reporting

- Automating data cleaning and transformations with Pandas.
- Generating and exporting reports in Excel, PDF, or HTML formats.
- Automating data visualization creation using Matplotlib or Seaborn.

Scheduling and Orchestrating Automated Tasks

- Scheduling Python scripts with tools like schedule or APScheduler.
- Using cron jobs or Task Scheduler for periodic automation.

Class 31: Practical Projects on Python

Project 09: Practical hands-on project on python

Project 10: Practical hands-on project by Students

Module 07: Course Final Projects

Class 32: Course Final Full Hands-on Project

- ❑ **Project Overview**
 - Project Selection
 - Data Collection
- ❑ **Data Analysis and Modeling**
 - Exploratory Data Analysis (EDA)
 - Data Modeling
 - Optimization and Refinement
- ❑ **Visualization and Reporting**
 - Creating Visual Dashboards
 - Report Writing

Class 33: Capstone Project Presentation

- ❑ **Presentation of Capstone Project**
 - Structuring Your Presentation
 - Visual Aids and Tools
 - Engaging Your Audience
- ❑ **Feedback on Your Capstone Project**
 - Receiving Feedback

- Evaluating Feedback

□ How Can You Improve

- Reflecting on Your Work
- Incorporating Feedback
- Next Steps



Career Development Specialized Course

[You will be accessed to this special course for FREE only if you are approved by Datiction team judging by regularity in the live classes, submitting all the required assignments and projects, completing your Capstone Project, as well as pass the Presentation on Capstone Project.]

Class 01: Mastering Soft Skills & Presenting Data Insights

- **Importance of Soft Skills in the Data Industry**
 - **Understanding the Role of Soft Skills in Career Success:**
 - Discuss how soft skills complement technical abilities and enhance overall performance in the workplace.
 - **Key Soft Skills:** Highlight critical soft skills like communication, teamwork, adaptability, and emotional intelligence.
 - **Why Technical Skills Alone Aren't Enough:**
 - Explore real-world examples of successful professionals who leveraged soft skills for career advancement.
 - **Communication, Problem-Solving, and Teamwork:**
 - The significance of these skills in collaborative projects and in conveying insights to stakeholders.
- **Effective Communication**
 - **Techniques to Explain Complex Insights Clearly:**
 - Strategies for breaking down intricate concepts into understandable terms for non-technical audiences.
 - **Active Listening:**

- Importance of listening to understand audience needs and responding appropriately.
- **Using Storytelling to Make Relatable and Engaging:**
 - Elements of effective storytelling: characters, conflict, resolution, and as a supporting character.
 - **Visual Storytelling:**
 - How to integrate visuals to enhance narratives.

- **Adapting Your Message to Different Audiences:**

- Identifying audience types (technical vs. non-technical) and tailoring communication styles accordingly.
- **Practical Exercises:**
 - Role-playing different audience scenarios to practice adaptation techniques.

□ Presentation Skills

- **Designing Effective Visuals:**

- Principles of design (contrast, alignment, repetition) to create visually appealing presentations.
- **Data Visualization Tools:**
 - Overview of popular tools and their features for creating effective visuals.

- **Structuring Presentations for Clarity and Impact:**
 - Best practices for outlining presentations: introduction, body, conclusion, and Q&A.
 - **Engagement Techniques:**
 - Strategies to maintain audience interest (e.g., interactive polls, questions).
 - **Tools and Techniques for Creating Compelling Presentations:**
 - Overview of presentation software (PowerPoint, Google Slides) and tips for effective use.
 - **Practice Session:**
 - Participants create a short presentation based on data provided and present it to the class for feedback.
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- **Real-World Case Studies**
 - **Analyzing Successful Data Presentations from Top Companies:**
 - Examination of case studies where data insights led to significant business decisions.
 - **Discussion on What Worked and Why:**
 - Identifying common themes in successful presentations and how they can be applied by participants.

□ Writing Professional Emails

- **Crafting Concise and Persuasive Emails for Job Applications:**
 - Key components of effective emails: subject lines, greetings, body content, and closings.
 - **Tailoring Messages:**
 - Customizing emails to reflect individual style while maintaining professionalism.

- **Effective Email Etiquette for Professional Communication:**

- Common pitfalls to avoid and best practices for maintaining professionalism.

□ Cold Outreach Strategies

- **Approaching Recruiters and Industry Professionals:**

- Techniques for identifying and reaching out to potential contacts in the industry.
 - **Building Your Elevator Pitch:**
 - Crafting a concise introduction that highlights your skills and aspirations.

- **Using Scripts and Templates for Initial Outreach:**

- Providing participants with templates and scripts for various outreach scenarios.

- **Role-Playing Cold Outreach Scenarios:**
 - Practicing outreach conversations to boost confidence.

□ Actionable Takeaways

- **Personal Development Plans:**
 - Encouraging participants to create a plan for developing soft skills through practice and feedback.
- **Resource Sharing:**
 - Providing links to articles, books, and online courses focused on enhancing soft skills and communication.

Class 02: Building Your Data-Driven CV & Optimizing LinkedIn for Visibility

□ Creating a Data-Specific CV

- **Key Components of a Resume for Professionals:**
 - Understanding the essential elements of a data-specific CV, including contact information, professional summary, skills, work experience, education, and certifications.
- **Formatting Tips:**
 - Using clear headings, bullet points, and appropriate fonts for readability.

- **Highlighting Relevant Skills, Projects, and Experiences:**

- Identifying core skills and showcasing them effectively.

- **Project Portfolio:**

- Including relevant projects (e.g., capstone projects, internships) and quantifying achievements with metrics to demonstrate impact.

□ Tailoring Your Resume

- **Customizing Your CV for Specific Job Applications:**

- Techniques for aligning your CV with the job description to increase the chances of passing through Applicant Tracking Systems (ATS).

- **Action Words and Metrics:**

- Using strong action verbs and incorporating measurable outcomes

- **Using Keywords and Metrics to Stand Out:**

- Identifying industry-specific keywords and incorporating them naturally into your CV.

- **Quantifiable Achievements:**

- Examples of how to present achievements in a data-driven manner

□ Job Shortlisting

- **Strategies for Identifying Job Opportunities that Match Your Skills:**

- Utilizing job boards, company websites, and professional networks to find suitable positions.
- **Networking:**
 - Leveraging connections to discover unadvertised job openings or receive referrals.

- **Evaluating Job Descriptions and Company Fit:**

- Techniques for analyzing job descriptions to assess alignment with your skills and career goals.
- **Company Research:**
 - Understanding company culture and values to determine if they fit your professional aspirations.

□ LinkedIn Optimization

- **Tips for Creating an Attractive LinkedIn Profile:**

- Crafting a compelling headline and summary that reflects your expertise and career aspirations.
- **Profile Photo and Banner:**
 - Selecting professional photos and customizing the LinkedIn banner to enhance your profile's visual appeal.

- **Best Practices for Profile Summaries, Skills, and Endorsements:**
 - Writing a concise summary that highlights your key skills and experiences.
 - **Skills Section:**
 - Choosing relevant skills and seeking endorsements from connections to enhance credibility.

□ LinkedIn Engagement

- **Building a Professional Network on LinkedIn:**
 - Strategies for connecting with professionals in your field, including alumni, colleagues, and industry leaders.
 - **Networking Etiquette:**
 - Best practices for sending connection requests and following up after connecting.
- **Engaging with Posts, Participating in Groups, and Connecting with Industry Professionals:**
 - Tips for actively engaging with content to increase visibility and establish thought leadership.
 - **Joining Relevant Groups:**
 - Finding and participating in LinkedIn groups related to data analytics and other relevant

fields to expand your network and share insights.

□ Actionable Takeaways

- **Personalized Resume Templates:**
 - Providing students with customizable resume templates tailored for data professionals.
- **LinkedIn Checklist:**
 - A step-by-step checklist for optimizing LinkedIn profiles, ensuring all key elements are addressed.
- **Resource Sharing:**
 - Offering links to online resources for further learning on CV writing and LinkedIn optimization.

Class 03: Mastering GitHub - Version Control Fundamentals

□ Introduction to Git and GitHub

- **Understanding Git vs. GitHub:** Differences and the relationship between Git (local version control) and GitHub (remote hosting and collaboration).
- **Setting Up Git and GitHub:** Installing Git, creating a GitHub account, setting up SSH keys for secure connections, and configuring global settings.

❑ Git Basics

- **Initializing a Repository:** Creating and configuring local repositories.
- **Tracking Changes:** Adding, committing, and staging files
- **Viewing History:** Using git log and git diff to review past changes, compare versions, and understand your project history.

❑ Branching and Merging

- **Branching Basics:** Creating, switching, and managing branches for feature development or bug fixes.
- **Merging Branches:** Merging different branches and handling simple conflict resolution.
- **Best Practices for Branching:** Effective branching strategies for teams working in parallel.

❑ Working with Remotes

- **Connecting Local to Remote:** Pushing and pulling changes from remote repositories like GitHub.
- **Cloning Repositories:** Creating local copies of remote repositories for collaboration.
- **Managing Remotes:** Adding, removing, and renaming remotes in your repository for better control of distributed workflows.

❑ Collaboration and Contribution

- **Pull Requests (PRs):** Submitting and reviewing code changes via GitHub's pull request feature
- **Forking and Cloning for Open Source:** Forking repositories for contributions and maintaining clean workflows.
- **Code Reviews:** Best practices for conducting code reviews, giving and receiving feedback in collaborative projects.

❑ Practical Exercise 1: Local and Remote Version Control

- ❖ **Task:** Set up a new local Git repository, track changes, and connect it to a remote GitHub repository. Make changes in a new branch, push those changes, and open a pull request for review.

Class 04: Advanced GitHub - Collaboration, Automation, and Best Practices

❑ Advanced GitHub Features

- **GitHub Issues and Projects:** Using GitHub Issues to track tasks and GitHub Projects to organize work with kanban-style project boards.
- **GitHub Actions:** Automating workflows with CI/CD pipelines, test automation, and deployment processes for continuous integration.

- **Security and Compliance:** Managing permissions, branch protection rules, and secure data handling with secrets in your workflows.

□ GitHub for Teams

- **Collaborative Workflows:** Exploring common team workflows like GitFlow, feature branches, and trunk-based development for larger projects.
- **Maintaining Continuous Integration (CI):** Setting up automated tests and deployments with GitHub Actions and integrating with services like Travis CI or Jenkins.

□ GitHub for Projects

- **Versioning Data and Notebooks:** Best practices for tracking changes.
- **Collaborating on Notebooks:** Managing notebook versions and resolving conflicts that arise during collaboration.

□ GitHub Pages and Documentation

- **Creating GitHub Pages:** Building and deploying static websites or documentation directly from GitHub repositories using GitHub Pages.
- **Hosting Project Documentation:** Using Markdown and static site generators like Jekyll for creating and hosting comprehensive project documentation.

- **Showcasing Your Work:** Leveraging GitHub Pages to present portfolio projects or maintain a professional blog for potential employers or collaborators.

□ Advanced Git Commands

- **Rebasing and Squashing Commits:** Using Git rebase to streamline commit history and squash commits before merging for a cleaner log.
- **Stashing and Cleaning:** Using git stash to temporarily store work in progress, and git clean to remove unwanted files from your working directory.
- **Cherry-picking Commits:** Applying specific commits from one branch to another to selectively introduce changes.

□ Advanced Collaboration Tools

- **Git Submodules and Monorepos:** Managing large projects by linking external repositories as submodules or using a monorepo strategy for multiple projects in one repository.
- **GitHub Classroom for Education:** Setting up GitHub Classroom to manage assignments and student submissions in educational environments, and automating grading.

□ Practical Exercise 2: Team Collaboration

- ❖ **Task:** Work in groups to simulate a real-world project. Each member creates a feature branch, makes changes,

opens a pull request, and merges the changes after code review. Set up GitHub Actions for automated testing.

Class 05: Cracking Job Interviews: Mock Interviews and Case Studies

□ Technical Interviews

▪ Understanding the Landscape:

- Overview of common technical interview formats in job roles, including coding tests, algorithm challenges, and system design questions.

▪ Preparation Techniques:

• Key Topics to Cover:

- Tools and languages commonly used (SQL, Python, R, etc.)

• Mock Technical Questions:

- Sample questions with explanations to prepare for challenges and technical assessments.

□ Behavioral Interviews

▪ Strategies for Success:

- Techniques for effectively answering situational, leadership, and teamwork-related questions.

• Using the STAR Method:

- **Situation:** Describe the context within which you performed a task or faced a challenge.
- **Task:** Explain your responsibilities in that situation.
- **Action:** Discuss the specific actions you took to address the situation.
- **Result:** Share the outcomes of your actions and what you learned.

- **Practice Behavioral Questions:**

- Examples of common behavioral questions, including how to tailor your responses using the STAR framework.

- **Case Study Problem-Solving**

- **Real-World Application:**

- Introduction to the importance of case studies in interviews for data roles and how they assess analytical thinking and problem-solving skills.

- **Approach and Methodology:**

- Steps to effectively analyze case studies, including understanding the problem, data gathering, defining metrics, and presenting solutions.

□ Mock Interviews

- **Hands-On Practice:**

- Conducting mock interviews to simulate real-world conditions and reduce interview anxiety.

- **Technical and Behavioral Simulations:**

- Pairing students to conduct mock interviews with pre-prepared questions, rotating roles as interviewer and interviewee.

- **Role-Playing Different Scenarios:**

- Discussing how to handle unexpected questions and situations that may arise during an interview.

□ Personalized Feedback

- **Performance Evaluation:**

- Providing tailored feedback to each student based on their mock interview performance, focusing on strengths and areas for improvement.

- **Tips for Refining Responses:**

- Guidance on body language, clarity of communication, and how to build confidence during interviews.

- **Actionable Steps:**

- Recommendations for additional resources (books, online courses) to further hone interview skills and techniques.

Class 06: Navigating the Job Market: Freelancing, Remote Jobs & Career Growth

□ Job Search Strategy

▪ Targeting Your Search:

- Effective techniques for identifying relevant opportunities through job boards like LinkedIn, Glassdoor, Indeed, and specialized job platforms like Kaggle, DataJobs, and AngelList.
- **Tailoring Your Applications:** Customizing your resume and cover letter for specific data analytics roles to align with job descriptions and keywords used by recruiters.
- **Networking for Success:** Leveraging professional networks through LinkedIn and industry-specific groups to uncover unadvertised opportunities and build relationships with hiring managers.

▪ Understanding Market Trends:

- A discussion of current hiring trends in the job field, including the growing demand and ethics.
- Overview of tools to explore salary expectations (e.g., Glassdoor, Payscale) and using resume scanners to optimize applications.

□ Freelancing Platforms

▪ Overview of Freelance Platforms:

- Exploring top freelancing platforms such as Upwork, Fiverr, Freelancer, Toptal.
- **Strategies for Success:** How to create a compelling freelancer profile, identifying high-demand and bidding effectively on projects.
- **Building Credibility:** Importance of client satisfaction, gaining positive reviews, and maintaining long-term freelance relationships.

□ Building a Freelancing Portfolio

▪ Presenting Work Samples:

- Crafting an online portfolio that showcases completed projects, including samples, and case studies.
- **Client Management Skills:** Managing client relationships, including setting clear expectations, defining project scopes, and maintaining professional communication through project updates and revisions.
- **Freelance Pricing Strategies:**
 - **Setting Rates:** Discussing how to determine appropriate freelance rates based on expertise, market demand, and project complexity.

- **Negotiation Skills:** How to negotiate rates and project terms confidently to ensure fair compensation while securing clients.

□ Remote Job Search Techniques

▪ Finding Remote Data Roles:

- Exploring platforms dedicated to remote opportunities such as We Work Remotely, Remote OK, FlexJobs, and RemoteTechJobs.
- Identifying remote-friendly companies and structuring applications to appeal to remote roles by emphasizing self-motivation, adaptability, and remote collaboration experience.
- **Leveraging Job Alerts and Referrals:** Setting up job alerts and utilizing referrals to maximize opportunities in the remote job market.

▪ Adapting to Remote Work:

- Best practices for succeeding in remote environments: time management, productivity tools (Slack, Trello, Asana), and maintaining a healthy work-life balance.
- **Communication Skills:** Tips for clear and effective communication in virtual settings, including email etiquette, documenting work, and handling asynchronous communication.

- **Time Management Techniques:** Introducing strategies like the Pomodoro Technique, time-blocking, and productivity apps (e.g., Todoist, Notion) to stay organized and meet deadlines effectively in remote roles.

□ Personal Branding and Portfolio Building

▪ Expanding Portfolio Platforms:

- Utilizing platforms like Kaggle (for competitions and showcasing data science work) and GitHub (for sharing projects and code).
- **Building a Personal Brand:** Establishing a personal website or blog to showcase thought leadership and expertise, and linking it to LinkedIn and GitHub for a cohesive online presence.
- **Engaging on Social Media:** Using LinkedIn to build your professional brand through thoughtful content, engagement in industry conversations, and participating in relevant groups.

□ Career Growth and What's Next?

▪ Exploring Future Learning Paths:

- Discussion of in-demand certifications
- **Continuous Learning:** Leveraging online platforms

- **Industry Opportunities and Career Progression:**
 - Exploring long-term career opportunities in specialized roles
 - Discussing networking strategies for career growth, attending industry conferences, and contributing to open-source projects to increase visibility and establish credibility in the field.

□ Open Q&A

- **Final Clarifications:**
 - An open forum for addressing questions related to freelancing, job searching, remote work, career progression, or personal branding.
 - **Additional Resources:** Offering curated resources such as blogs, podcasts, books, and communities for continuous career growth and skill enhancement.

Thank You!