Codelab
EduCare

COURSE BROCHURE

DATA ANALYSIS

Officially registered by:
Computer Professionals of Nigeria (CPN) & National information techonlogy development (NITDA)

Codelab Institute CodelabEducare

COMPANY OVERVIEW

Mission
To empower individuals with practical, in-demand tech skills that enable them to thrive in today's digital economy. We are committed to providing hands-on learning, mentorship, and a supportive community that nurtures growth and innovation.

Vision
To become a leading hub for tech education and innovation in Africa developing highly skilled professionals who contribute to global technological advancement.

Our Experience
Since our inception in the previous years, we have successfully trained over 200 students in various tech fields helping them gain real-world experience and launch rewarding careers.

Learning Experience & Facilities
Virtual Classes
Conducted online for flexibility and convenience.
Every class is recorded and shared with students for future review.

Physical Classes
Held at our training center Mondays to Fridays.
Equipped with modern learning tools and a conducive learning environment.

Real-Life Projects
Each student works on a minimum of four real-life projects, designed to build confidence, technical competence, and portfolio-ready experience.

Mentorship & Peer Learning
We provide a structured mentorship program and a vibrant peer learning community where students collaborate, share knowledge, and grow together.

Certification
Students receive certificates of completion upon successfully finishing their program ecognized by our partners and industry bodies.

Testimonials & Success Stories

We highlight inspiring journeys from our graduates who have transitioned into tech roles or started their own ventures.

Testimonials from Our Alumni

"I will love others to come and enjoy what i am at Codelab"
- Stephen David (Backend Development)

"Codelab is doing alot, they don't just teach you, they watch you, and they help you grow"
- Uloma Darlington (Digital Marketing)

"You can ask 1,000 question, no one will make you feel bad for asking instead they help you understand"
- Faith Kumapayi (Web Development)

"Some of the things i thought impossible to do i learn them here at codelab, i've been able to do them, the world is moving at a fast rate and you should be at the front. it an amazing experience don't be left behind"
- Abdulrahman Sadiq (UI/UX)

Payment Options

•Flexible installment plans available.
•Secure online and in-person payments accepted.

Accreditations & Recognition

Our programs are recognized and supported by top industry bodies:
• Nigerian Computer Society **(NCS)**
•Computer Professionals (Registration Council) of Nigeria **CPN**
•National Information Technology Development Agency **(NITDA)**

MENTORS PROFILE

A Message from Your Mentor, Godsmiracle

Hello future data professionals!

I'm Godsmiracle, a Data Analyst and Data Scientist with practical experience in transforming raw data into meaningful insights and intelligent solutions. I teach Data Analysis, Data Science, and Artificial Intelligence (AI) using Python here at Codelab Educare.

I have worked on real-world data projects involving dataset preparation, dashboard development for informed decision-making, and building machine learning models to solve practical problems. These experiences guide my teaching approach. I don't just teach tools like Excel, SQL, Power BI, and Python. I focus on helping you understand how to think and work like a Data Scientist.

For me, data is more than numbers it is a language that explains how systems behave and how decisions can be improved. Once you understand how to analyze and interpret data, you gain a skill that is valuable across any industry ,business, finance, healthcare, government, and technology.

Our learning journey together will be practical and hands-on. You will not just learn theory, but you will apply what you learn to real exercises and projects that build your confidence.

I'm excited to teach you, support your growth, and help you build a strong foundation in Data Analysis and Data Science.

Let's grow together.
Godsmiracle

CAREER PATHS

Career Outcomes

At Codelab Institute, our graduates go on to build impactful careers in technology, business, and design. Each program is structured to equip you with practical skills, real-world projects, and mentorship that prepare you for in-demand global roles.

Possible Career Paths:

Data Scientist

Machine Learning Engineer

AI Developer

Research Analyst

Predictive Modeler

Career Growth:
With growing demand for automation and analytics, this field offers global opportunities in FinTech, HealthTech, EdTech, and AI research.

Average Salary Range:
₦400,000 – ₦1,500,000/month

DATA ANALYSIS

COURSE DESCRIPTION

In today's data-driven world, the ability to transform raw information into actionable insights is a superpower. This comprehensive course is designed to take you from novice to proficient data analyst by mastering the essential toolkit: Excel, SQL, Power BI, and Python. Through apractical, hands-on curriculum, you will learn not just the functions of each tool, but how to integrate them into a powerful workflow to solve real-world business problems. By the end of this course, you will be equipped to clean, analyze, visualize, and present data with confidence, making you a valuable asset in any industry.

Who is this course for?

- Aspiring Data Analysts: Individuals looking to launch a career in data analysis.
- Professionals Upskilling: Marketers, managers, accountants, and other professionals who work with data and want to enhance their analytical capabilities.
- Students and Enthusiasts: Anyone with a curiosity for data and a desire to gain practical, in-demand skills.
- Career Changers: Individuals seeking to build a portfolio of data projects to transition into a data-focused role.

What You Will Achieve

- Master Key Tools: Gain proficiency in the four pillars of modern data analysis: Excel, SQL, Power BI, and Python.
- Develop Core Skills: Execute the full data analysis process: data acquisition, cleaning,transformation, analysis, visualization, and storytelling.
- Build a Portfolio: Complete multiple hands-on projects and a final capstone to showcase your skills to employers.
- Solve Real Problems: Learn to apply your skills to common business scenarios like sales analysis, customer insight generation, and market trend reporting.

Tools & Technologies

Microsoft Excel (Office 365 or latest version)
- SQL (via MySQL, PostgreSQL, or SQLite)
- Microsoft Power BI Desktop (Free)
- Python 3.x (via Anaconda Distribution)
- Python Libraries: Pandas, NumPy, Matplotlib, Seaborn
- Development Environment: Jupyter Notebook

Detailed Curriculum: Modules & Weekly Breakdown

MODULE 1: FOUNDATIONS OF DATA ANALYSIS
Class 1: Introduction to Data Analysis

Learning Objectives: Understand the role of a data analyst and the data analysis lifecycle.

Topics:
- What is Data Analysis? Defining the field and its impact.
- The Data Analysis Process (Ask, Prepare, Process, Analyze, Share, Act).
- Key Concepts: Metrics, KPIs, and Data-Driven Decision Making.
- Course Roadmap and Project Overview.
- Activity: Identify KPIs for a sample business case study.

Class 2: The Data Analyst's Toolkit
Learning Objectives: Get a high-level overview of the tools used in the course and their specific purposes.

Topics:
- Excel: The versatile spreadsheet tool for quick analysis and calculations.
- SQL: The language for extracting and manipulating data from databases.
- Power BI: The powerful platform for creating interactive dashboards and reports.
- Python: The programming language for advanced data manipulation and automation.
- Setting up your development environment.
- **Activity:** Install and configure all necessary software.

MODULE 2: EXCEL FOR DATA ANALYSIS
Class 3: Excel Basics for Analysts
Learning Objectives: Navigate Excel efficiently and prepare data for analysis.

Topics:

- Data Entry, Formatting, and Best Practices.
- Essential Keyboard Shortcuts for Productivity.
- Sorting, Filtering, and Using Tables.
- Introduction to Data Validation.

Hands-On Lab: Clean and structure a raw dataset for analysis.

Class 4: Essential Excel Formulas
Learning Objectives: Use core functions to derive insights from data.

Topics:
- Logical Functions: IF, IFS, AND, OR.
- Statistical Functions: SUM, AVERAGE, COUNT, MIN, MAX.
- Text Functions: LEFT, RIGHT, MID, CONCAT, LEN.
- Date & Time Functions: TODAY, NOW, DATEDIF.
- **Hands-On Lab:** Perform calculations on a sales dataset to summarize performance.

Class 5: Data Visualization in Excel
Learning Objectives: Create effective charts to communicate findings.

Topics:
- Principles of Effective Data Visualization.
- Creating Charts: Bar, Column, Line, Pie, and Scatter Plots.
- Formatting and Customizing Charts for Clarity.
- Introduction to Sparklines.
- **Hands-On Lab:** Build a one-page dashboard of key metrics.

Class 6: Advanced Excel Techniques
Learning Objectives: Perform powerful lookups and data summarization.

Topics:
- VLookup Functions: VLOOKUP, HLOOKUP, XLOOKUP, INDEX-MATCH.
- PivotTables: The ultimate tool for summarizing and aggregating data.
- Slicers & Timelines: Making your PivotTables interactive.

Hands-On Project: Sales Commission Calculator. Use VLOOKUP and other functions to calculate commissions for a sales team based on a tiered structure.

MODULE 3: SQL FOR DATA ANALYSIS
Class 7: Introduction to SQL
Learning Objectives: Write basic queries to retrieve data from a database.

Topics:
- Understanding Relational Databases (Tables, Rows, Columns).
- The SELECT Statement: Retrieving Data.
- Filtering Data with the WHERE Clause.

• Sorting Results with ORDER BY.
Hands-On Lab: Query a customer database to find specific records.

Class 8: Intermediate SQL: Aggregating Data
Learning Objectives: Summarize large datasets to find trends.

Topics:
• Aggregate Functions: COUNT, SUM, AVG, MIN, MAX.
• Grouping Data with GROUP BY.
• Filtering Groups with HAVING.
• Combining WHERE and HAVING.
Hands-On Lab: Analyze an e-commerce dataset to find total sales by product category and customer region.

Class 9: Advanced SQL: Combining Data
Learning Objectives: Query multiple tables to perform complex analysis.

Topics:
• Understanding SQL Joins: INNER JOIN, LEFT JOIN.
• Writing Subqueries.
• Introduction to Window Functions (e.g., RANK, ROW_NUMBER).
Hands-On Project: Customer Order Analysis. Join `customers`, `orders`, and `products`tables to analyze purchasing behavior and customer value.

MODULE 4: POWER BI FOR DATA VISUALIZATION
Class 10: Introduction to Power BI
Learning Objectives: Connect to data sources and build a basic data model.

Topics:
• Power BI Interface: Reports, Data, and Model Views.
• Connecting to Data Sources (Excel, SQL Database).
• The Power Query Editor: Introduction to Data Transformation.
• Building a Simple Data Model with Relationships.
Hands-On Lab: Load and clean data from multiple sources into Power BI.

Class 11: Creating Dashboards & Storytelling
Learning Objectives: Design interactive reports that tell a compelling story.

Topics:
• Core Visualizations: Bar/Column Charts, Line Charts, Maps, Cards, KPIs.
• Adding Interactivity: Cross-Filtering and Drillthrough.
• Design Principles for Dashboards.
• The Art of Data Storytelling.
Hands-On Lab: Build an interactive sales performance dashboard.

Class 12: Advanced Power BI: DAX & Deployment
Learning Objectives: Create calculated measures and share reports.

Topics:
• Introduction to DAX (Data Analysis Expressions).
• Essential DAX Functions: CALCULATE, SUMX, RELATED.
• Creating Calculated Columns and Measures.
• Publishing to Power BI Service and Sharing Reports.
Hands-On Project: Financial Report with DAX. Create time-intelligent calculations (e.g.,Month-to-Date, Year-over-Year growth) for a financial dataset.

MODULE 5: PYTHON FOR DATA ANALYSIS
Class 13: Getting Started with Python
Learning Objectives: Set up a Python environment and run basic data operations.

Topics:
• Why Python for Data Analysis?
• Introduction to Jupyter Notebook.
• Core Libraries: Pandas, NumPy, Matplotlib.
• Basic Data Structures: Series and DataFrames.
Hands-On Lab: Import the Pandas library and create your first DataFrame.

Class 14: Data Manipulation with Pandas
Learning Objectives: Clean, filter, and reshape datasets programmatically.

Topics:
• Loading Data from CSV and Excel files.
• Data Cleaning: Handling Missing Values, Removing Duplicates.
• Filtering and Selecting Data (loc, iloc).
• Grouping and Aggregation with `groupby()`.
Hands-On Lab: Perform a comprehensive cleaning and analysis of a messy dataset.

Class 15: Data Visualization with Matplotlib & Seaborn
Learning Objectives: Create customized, publication-quality visualizations.

Topics:
• Creating plots with Matplotlib: Histograms, Scatter Plots, Bar Charts.
• Advanced plotting with Seaborn for statistical graphics.
• Customizing Titles, Labels, and Legends.
• Saving Figures for reports.
Hands-On Lab: Visualize the trends and relationships discovered in the previous class's dataset.

MODULE 6: PRACTICAL PROJECTS AND INTEGRATION
Class 16: Project - Sales Data Analysis with Excel
Project Goal: Integrate all Excel skills into a complete analysis.

Task: Provided with a year of raw sales data, students will clean the data, create pivot tables to summarize performance by product and salesperson, and build a dynamic dashboard with charts and slicers.
Deliverable: A single Excel file with raw data, analysis sheets, and a final dashboard tab.

Class 17: Project - Market Trends Analysis with SQL and Python
Project Goal: Combine SQL and Python in a realistic workflow.
Task:
1. Use SQL to extract a specific subset of data from a large database (e.g., "2023 customer reviews").
2. Export the query results.
3. Use Python (Pandas & Matplotlib) to load the exported data, analyze sentiment trends over time, and create visualizations.
Deliverable: A Jupyter Notebook containing the Python code and visualizations, along with the SQL query used.

Class 18: Capstone Project - End-to-End Business Analysis
1. Project Goal: Showcase mastery by combining all tools into one project.
2. Task: Students choose from a provided business case (e.g., for an online store).
3. SQL: Write complex queries to extract relevant data from multiple tables.
4. Python: Perform advanced cleaning and analysis that is difficult in SQL.
5. Excel: Use for ad-hoc analysis or final calculations.
6. Power BI: Connect to the final cleaned dataset to build a comprehensive, interactive dashboard that tells the full story of the business's performance.
7. Deliverable: A presentation showcasing the Power BI dashboard and explaining the analytical process and key insights.

ASSESSMENT & CERTIFICATION
• Class Participation & Labs (20%): Active engagement and completion of in-class exercises.
• Module Projects (50%): Assessment of hands-on projects from each module (Excel, SQL, Power BI, Python).
• Final Capstone Project (30%): Comprehensive evaluation of the integrated final project.
• CodeLab Institute Certificate of Mastery: Awarded upon successful completion of all assessments and a passing grade.

Get in Touch

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