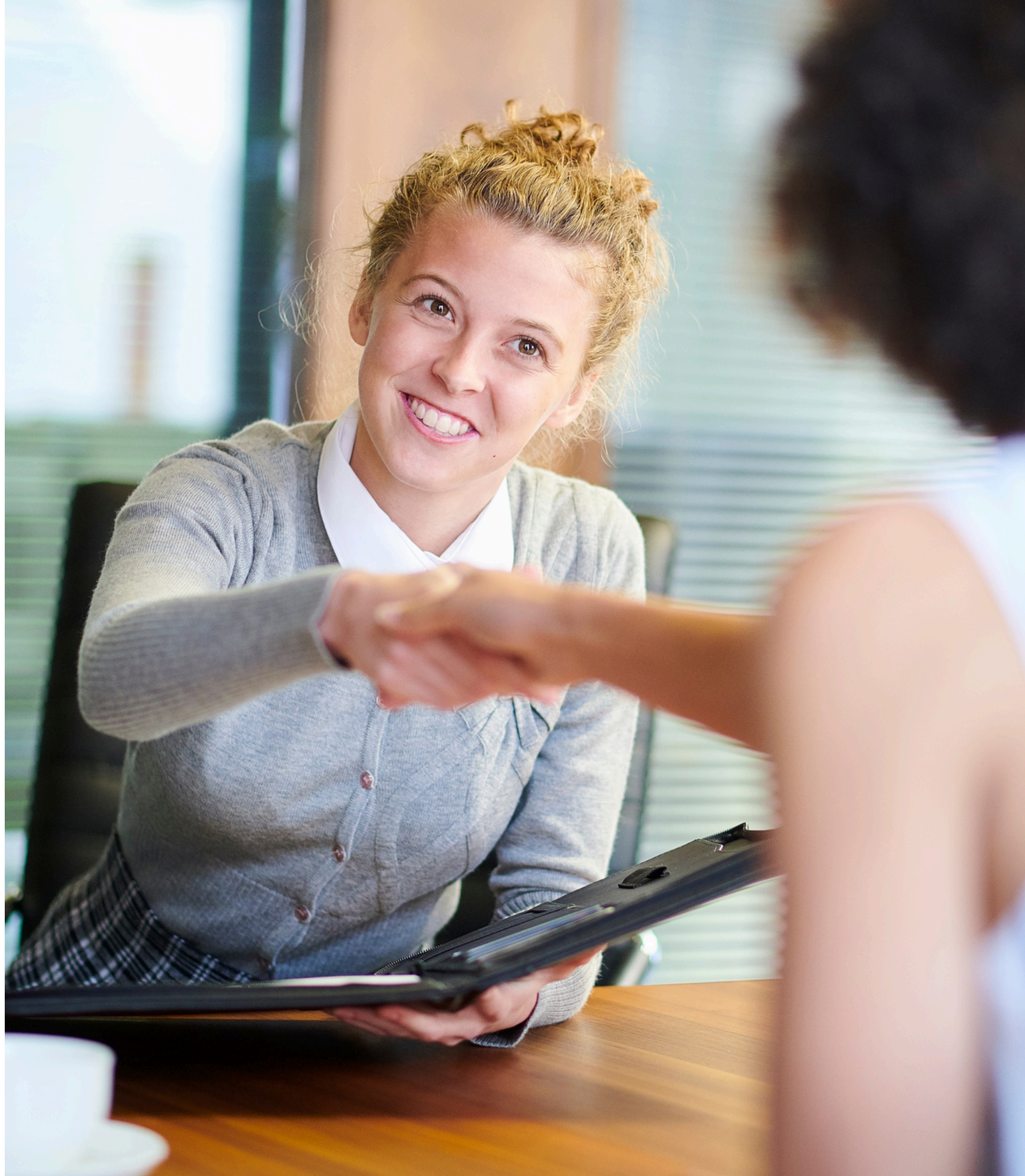
Tech Learniversity

JOB GUARANTEED PROGRAM

QUALITY EDUCATION FROM QUALITY PEOPLE



Tech Learniversity

PROGRAM NAME

DATA ANALYST PROGRAM

QUALITY EDUCATION FROM QUALITY PEOPLE

DATA ANALYST PROGRAM

This Data Analyst Program provides an end-to-end learning path focusing on data extraction, cleaning, analysis, visualization, and effective communication of insights. By the end of this course, learners will have built practical skills in Excel, SQL, Python/R, and BI tools (e.g., Tableau, Power BI), enabling them to transform raw data into actionable recommendations.

Course Overview

Demand for skilled data professionals continues to surge, with an expected 23% growth in data-related roles by 2031 (BLS). This course is structured to address these market needs by giving participants:

– A solid foundation in data fundamentals and Excel
– Mastery of SQL for data retrieval, manipulation, and management
– Hands-on experience with Python/R for data analysis
– Skill in advanced data visualization and storytelling
– Knowledge of statistical and exploratory methods
– Professional development for real-world data projects, ethical considerations, and career preparation.

COURSE TYPE

This program is designed for learners at a beginner-to-intermediate level. It gradually advances into more complex topics, making it accessible for those new to data analysis yet robust enough to challenge learners with some existing background.

Course Objectives

1. Understand fundamental data concepts, including data sources and data quality measures.
2. Gain practical proficiency in Excel for data cleaning, transformation, and basic analytics.
3. Develop strong SQL skills—creating databases and tables, writing queries, and handling complex joins, aggregations, functions, and triggers.
4. Learn Python/R programming for deeper data analysis, using libraries like Pandas, NumPy, SciPy, and Tidyverse.
5. Master data visualization principles using Tableau, Power BI, and advanced storytelling techniques.
6. Grasp essential statistical concepts, including descriptive and inferential statistics, hypothesis testing, and regression.

COURSE OBJECTIVES

7. Apply professional best practices such as version control, data ethics, and effective communication.
8. Complete a capstone project demonstrating an end-to-end data analysis workflow.

Duration

220 Hours

Requirements

– A computer (Windows, macOS, or Linux) with at least 8 GB of RAM and sufficient disk space.
– Stable internet connection for lab exercises, online training sessions, and collaborative tools.
– Installed software: Excel (or equivalent), a SQL-friendly database client, Python/R environments, and visualization tools (Tableau or Power BI).

PRE-REQUISITES

– Basic computer knowledge and comfort with file management.
– Familiarity with spreadsheets is helpful but not mandatory.
– No strict programming background required; the course covers Python/R essentials.

Target Audience

– Beginners interested in launching a career in data analytics.
– Non-IT professionals transitioning into data-focused roles.
– Business professionals looking to enhance their data-handling capabilities.
– Students and fresh graduates aiming to specialize in analytics or data science.

CAREER AND FUTURE PROSPECTS

Data Analysis is a high-demand field across various sectors, including finance, healthcare, retail, e-commerce, and technology. Skilled data analysts can progress into roles such as:
– Business Intelligence Analyst
– Data Scientist
– Analytics Manager or Team Lead
– Data Engineering roles (with additional specialization)
– Data Visualization Specialist
With continued experience and upskilling, professionals can evolve to more advanced data science, machine learning, or strategic advisory roles.

Designation/Title

Graduates of this program commonly pursue job titles like:
– Junior Data Analyst
– Data Analyst
– Senior Data Analyst
– Data Visualization Specialist
– Business Intelligence Analyst
– Data Scientist (entry-level)

PROJECTS

Hands-on projects are integrated throughout the course. Key projects include:
– Excel-based Sales Performance Analysis (Module 1)
– SQL-based Customer Segmentation and Querying (Module 2)
– Python/R Sentiment Analysis of Customer Reviews (Module 3)
– Interactive Sales Dashboard in Tableau or Power BI (Module 4)
– A/B Testing and Exploratory Data Analysis (Module 5)
– Capstone Project: End-to-end data analytics on a real-world dataset of choice, culminating in a professional presentation.

Salary

India : ₹5 LPA – ₹12 LPA
USA : $60,000 – $90,000
Canada : CA$55,000 – CA$85,000
UK : £30,000 – £50,000
Australia : AU$65,000 – AU$95,000

FEATURES

– Practical Curriculum: Focuses on real-world data sets, common business scenarios, and industry-standard tools.
– Industry-Relevant Tools: Excel, SQL, Python/R, Tableau, Power BI.
– Case Studies & Capstone: Emphasizes problem-solving and analysis skills, boosting your job readiness.
– Flexible Learning: Online modules, hands-on labs, and collaborative assignments.
– Career Support: Resume building, mock interviews, and mentorship for non-technical career switchers.

Benefits

– Holistic Skill Set: Develop both technical competencies and soft skills (communication, teamwork, presentation, stakeholder engagement).
– Hands-On Learning: Complete portfolio-worthy projects demonstrating your practical experience.
– Growth Potential: Enter a high-demand field with abundant opportunities for career progression.
– Professional Network: Collaborate with peers and instructors, creating valuable industry connections.
– Confidence & Readiness: Graduate with the ability to transform real-world data into actionable insights for businesses.

SYLLABUS

MODULE 1. DATA FUNDAMENTALS & EXCEL MASTERY

- **Data Concepts:** Data types (nominal, ordinal, interval, ratio), data sources (CRM, ERP, web logs), data quality dimensions (accuracy, completeness, consistency).

- **Excel:**

- SUMIFS
- COUNTIFS
- VLOOKUP
- HLOOKUP
- XLOOKUP
- INDEX
- MATCH
- FIND
- LEFT
- RIGHT
- IF
- AND
- OR

SYLLABUS

- AVEREGE
- MAX
- MIN
- TRIM
- MID
- POWER QUERY

- **Data Cleaning:** Identifying/handling missing values (ISBLANK), duplicate removal, text manipulation (TEXT TO COLUMNS, CONCATENATE).

- **Basic Visualization:** Creating charts (bar, line, pie) for trend analysis and comparisons; conditional formatting.

Case Study: Sales performance analysis for a retail chain using raw transaction data.

SYLLABUS

MODULE 2. RELATIONAL DATABASES & SQL FOR DATA RETRIEVAL

- **Basic SQL Commands (DDL & DML Introduction):**

- CREATE DATABASE and USE
- CREATE TABLE: Defining columns, data types (INT, VARCHAR, TEXT, DATE, BOOLEAN, DECIMAL), constraints (NOT NULL, UNIQUE, PRIMARY KEY, FOREIGN KEY, CHECK, DEFAULT)
- INSERT INTO: Single row, multiple rows, inserting from SELECT
- SELECT: Basic projection and selection, DISTINCT keyword
- UPDATE: Single row, multiple rows, conditional updates
- DELETE FROM: Conditional deletion, TRUNCATE vs. DELETE
- DROP TABLE, ALTER TABLE (ADD, DROP, MODIFY COLUMN)
- COMMENT on tables/columns

- **Filtering Data with WHERE Clause:**

- Comparison operators (=, !=, >, <, >=, <=)
- Logical operators (AND, OR, NOT)
- BETWEEN, IN, LIKE (wildcards: %, _), IS NULL / IS NOT NULL

SYLLABUS

- **Ordering and Limiting Results:**

- ORDER BY: Ascending/Descending, multiple columns
- LIMIT / OFFSET (MySQL/PostgreSQL) or TOP (SQL Server) for pagination

- **Aggregate Functions:**

- COUNT, SUM, AVG, MIN, MAX
- GROUP BY: Grouping data for aggregates
- HAVING: Filtering grouped data

- **Case Expressions and Conditional Logic:**

- CASE WHEN THEN ELSE END
- COALESCE, NULLIF

SYLLABUS

- **SQL Join Types:**

- INNER JOIN
- LEFT (OUTER) JOIN
- RIGHT (OUTER) JOIN
- FULL (OUTER) JOIN
- SELF JOIN
- CROSS JOIN

- **Set Operations:**

- UNION, UNION ALL
- INTERSECT
- EXCEPT / MINUS

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- **Advanced DDL:**

- CREATE INDEX
- DROP INDEX, ALTER INDEX
- CREATE VIEW
- DROP VIEW, ALTER VIEW
- CREATE SEQUENCE

- **Data Control Language (DCL):**

- GRANT: Assigning permissions (SELECT, INSERT, UPDATE, DELETE, CREATE, ALTER, DROP)
- REVOKE: Removing permissions

- **Stored Procedures:**

- CREATE PROCEDURE / CREATE FUNCTION: Defining parameterized routines
- Control flow (IF/ELSE, WHILE loops, CASE statements)
- Error handling (TRY/CATCH in SQL Server, EXCEPTION in PostgreSQL/Oracle)

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- **Triggers:**

- CREATE TRIGGER: Defining actions on DML events (INSERT, UPDATE, DELETE)
- FOR/AFTER vs. INSTEAD OF triggers
- OLD and NEW row references (PostgreSQL/Oracle) / inserted and deleted tables (SQL Server)
- Normalization (1NF, 2NF, 3NF, BCNF)

- **Window Functions:**

- ROW_NUMBER(), RANK(), DENSE_RANK(), NTILE()
- LEAD(), LAG(), FIRST_VALUE(), LAST_VALUE()
- Aggregate window functions (SUM() OVER(...), AVG() OVER(...))

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- **JSON and XML Data in SQL:**

- Storing, querying, and manipulating JSON/XML data types
- JSON_EXTRACT, JSON_OBJECT, JSON_ARRAY (MySQL/PostgreSQL) / FOR JSON, OPENJSON (SQL Server)

- **Practice Platforms:** PostgreSQL, MySQL, BigQuery (cloud-based SQL).
- **Case Study:** Customer segmentation from a marketing database based on purchase history.

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MODULE 3. PROGRAMMING FOR DATA ANALYSIS (PYTHON/R)

- **Python Essentials:** Data types, control flow, functions, basic data structures (lists, dictionaries).
- Libraries :- Numpy,Scipy,Matplotlib,Seaborn,
- Pandas for Data Manipulation:-(DataFrames,Series,GroupBy operations, merging, reshaping, handling missing data,outlier detection).
- Data Structures :- Efficient use of dictionaries, sets, tuples, and custom classes for data handling.

- **Pandas Library:** DataFrames, series, data loading (CSV, Excel), filtering, sorting, merging, reshaping (pivot_table).
- **NumPy Library:** Array operations, numerical computing.
- **R Essentials:** Vectors, data frames, base R functions.
- **Tidyverse (R):** dplyr for data manipulation (filter, select, mutate, group_by, summarise), ggplot2 for visualization.
- **Data Acquisition:** Basic web scraping (BeautifulSoup) or API calls (Requests).
- **Case Study:** Analyzing customer reviews from e-commerce websites to extract sentiment.

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MODULE 4. DATA VISUALIZATION & STORYTELLING

- **Principles:** Choosing appropriate chart types, visual encoding (color, size), avoiding chart junk, Gestalt principles.
- **Tools:** Tableau Desktop/Public, Power BI Desktop (hands-on project building).
- **Advanced Visuals:** Heatmaps, treemaps, scatter plots, geographic maps, dual-axis charts.
- **Dashboard Design:** Layout, interactivity (filters, parameters), drill-down capabilities.
- **Storytelling:** Structuring a narrative with data, identifying key takeaways, audience engagement, delivering actionable recommendations.
- **Case Study:** Building an interactive sales dashboard for a global company, demonstrating regional performance and product trends.

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MODULE 5: STATISTICAL FOUNDATIONS & EXPLORATORY DATA ANALYSIS

- **Descriptive Statistics:** Measures of central tendency (mean, median, mode), measures of dispersion (variance, standard deviation, IQR).
- **Probability:** Basic concepts, probability distributions (normal, binomial, Poisson).
- **Inferential Statistics:** Hypothesis testing (t-tests, ANOVA, Chi-squared tests), p-values, confidence intervals.
- **Correlation & Regression:** Pearson/Spearman correlation, simple linear regression concepts (R-squared).
- **EDA Techniques:** Histograms, box plots, scatter plot matrices, identifying outliers, assessing data distribution,
- **Case Study:** A/B testing analysis for a website redesign, evaluating user engagement metrics.

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MODULE 6: ADVANCED DATA TRANSFORMATION & PROFESSIONAL PRACTICES

- **Data Cleaning Strategies:** Imputation techniques (mean, median, mode, regression), outlier detection (Z-score, IQR method), handling categorical data (one-hot encoding).
- **Feature Engineering:** Creating new variables from existing ones to enhance analysis (e.g., age from birth date).
- **Version Control:** Introduction to Git and GitHub for collaborative projects and code management.
- **Communication Skills:** Presenting findings to non-technical stakeholders, crafting executive summaries and compelling reports.
- **Ethical Data Use:** Data privacy (GDPR, CCPA awareness), bias in data, responsible data collection and reporting.
- **Career Preparation:** Portfolio development, resume tips, interview strategies, mock interviews focusing on technical and behavioural questions.

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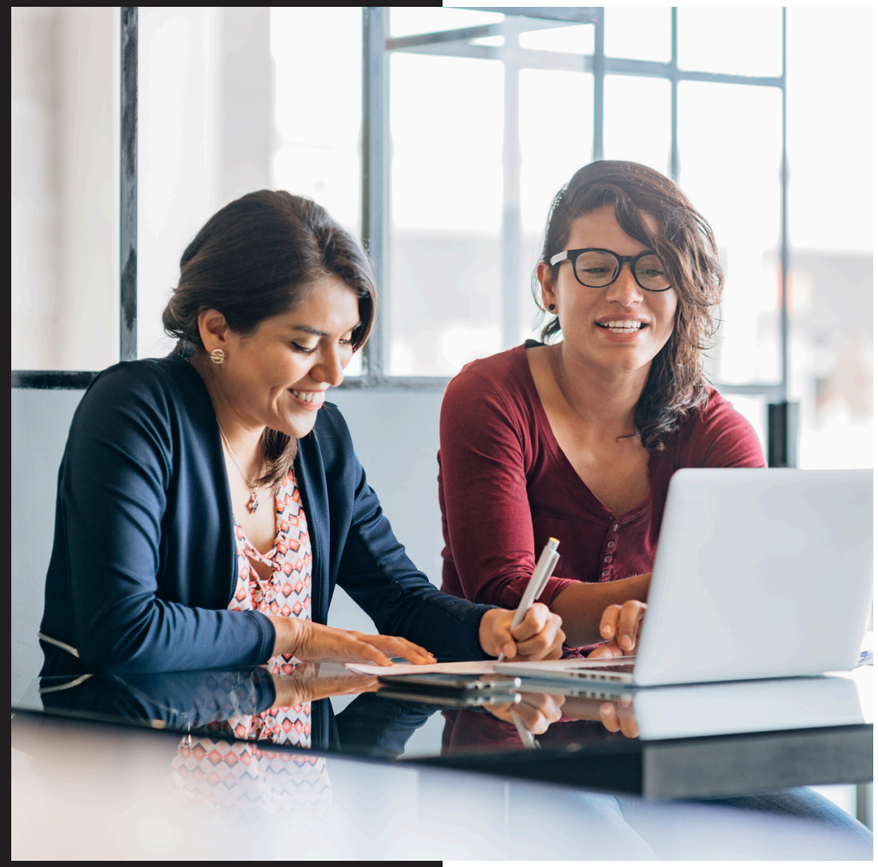
CAPSTONE PROJECT

- **End-to-End Analysis:** Students work on a real-world dataset from an industry of choice (e.g., marketing, finance, healthcare, operations).
- **Phases:** Problem definition, data collection/extraction, cleaning and preprocessing, exploratory analysis, statistical modeling (if applicable), visualization, and final presentation of insights and recommendations.
- **Tools Utilized:** Combination of Excel, SQL, Python/R, and Tableau/Power BI.
- **Deliverables:** Cleaned dataset, SQL queries/Python scripts, interactive dashboard, and a comprehensive report/presentation.



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Choose Tech Learniversity for quality education from industry experts committed to empowering your success. Embark on a transformative educational journey with Tech Learniversity and unlock your potential for a brighter future. Together, we can create meaningful experiences that inspire growth, collaboration, and success!

Company Description

At Tech Learniversity, we are dedicated to transforming lives through accessible, cutting-edge technology education and personalized learning experiences that empower individuals to excel in the digital era.

ABOUT US

Company Description

Tech Learniversity is a cutting-edge EdTech firm dedicated to revolutionizing global education through personalized learning experiences. We offer innovative training programs, including immersive bootcamps and next-generation AI courses, designed to equip learners with the skills needed to excel in today's competitive job market.

More Information

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