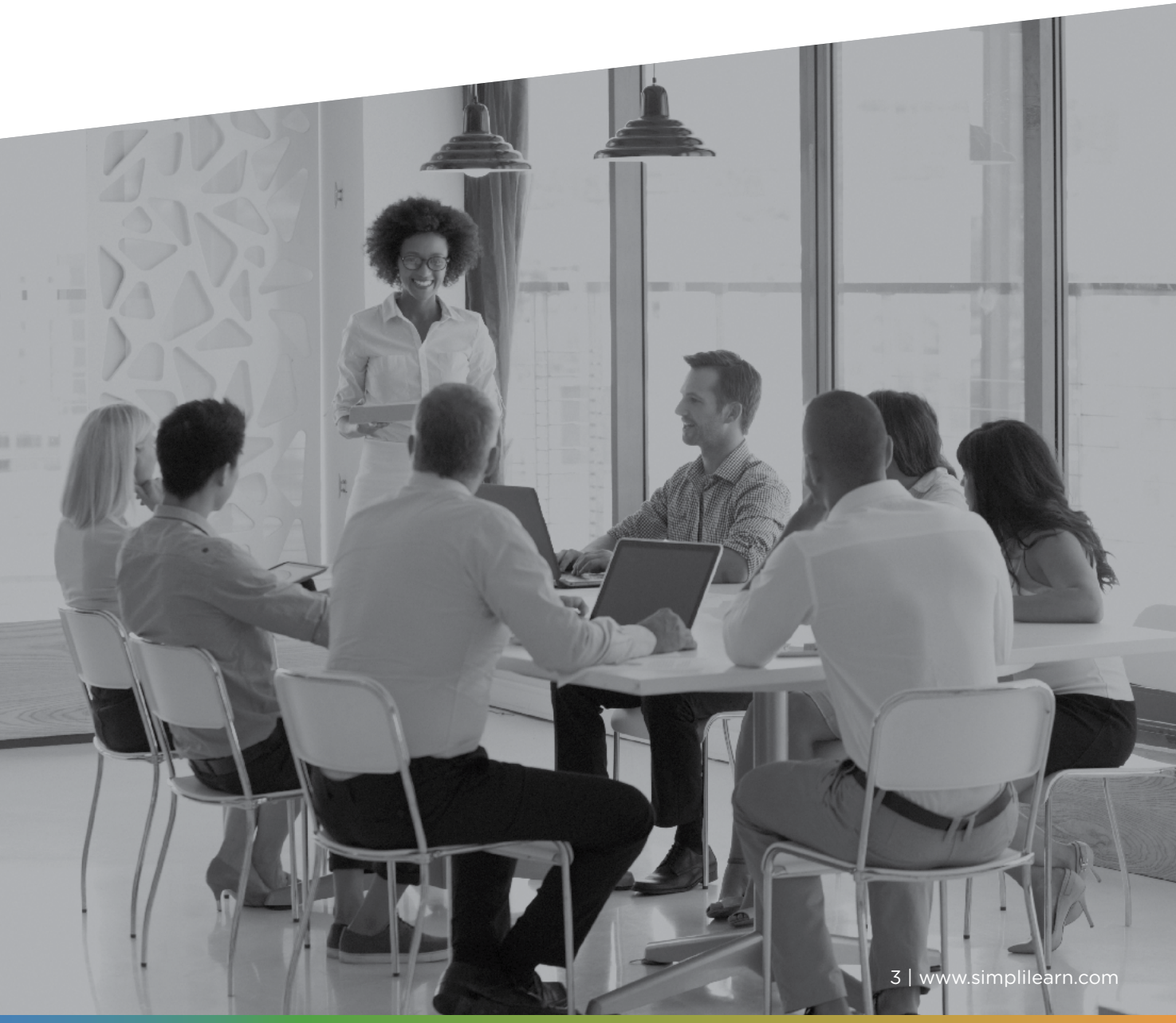
DATA ANALYST MASTER'S PROGRAM

In Collaboration with IBM

Contents

About the Course

This Data Analyst Master's Program, in collaboration with IBM, will transform you into a data analytics expert. In this course, you will learn the latest analytics tools and techniques, how to work with SQL databases, the languages of R and Python, the art of creating data visualizations, and how to apply statistics and predictive analytics in a business environment.



Key Features

- Exclusive hackathons and live interaction with IBM leadership
- Live masterclasses and Ask Me Anything sessions from IBM experts
- 8X higher live interaction with live online classes by industry experts
- Capstone and 20+ real-life Data Science projects built on data sets from different industries such as Banking, eCommerce, Technology, and Manufacturing
- Top-notch curriculum with integrated labs

About IBM and Simplilearn collaboration

This joint partnership between Simplilearn and IBM introduces students to an integrated Blending Learning approach, making them experts in data analysis. This program, in collaboration with IBM, will help students become industry-ready for data analyst job roles. IBM is a leading cognitive solution and cloud platform company, offering a plethora of technology and consulting services. Each year, IBM invests $6 billion in research and development and has achieved five Nobel Laureates, nine U.S. National Medals of Technology, five U.S. National Medals of Science, six Turing Awards, and 10 inductions into the U.S. Inventors Hall of Fame.

About Simplilearn

Simplilearn is a leader in digital skills training, focused on the emerging technologies that are transforming our world. Our Blended Learning approach drives learner engagement and is backed by the industry's highest completion rates. Partnering with professionals and companies, we identify their unique needs and provide outcome-centric solutions to help them achieve their professional goals.

Learning Path - Data Analyst

Electives

- Programming Refresher
- SQL
- R Programming for Data Science
- Data Science with R
- Power BI

Data Analyst Master's Program Outcomes

Understand essential statistical concepts, including measures of central tendency, dispersion, correlation, and regression

Master SQL concepts such as Universal Query Tool and SQL command

Write your first Python program by implementing concepts of variables, strings, functions, loops, and conditions

Understand the nuances of lists, sets, dictionaries, conditions and branching, objects, and classes in Python

Work with data in Python, including reading and writing files, loading, working, and saving data with Pandas

Learn how to interpret data in Python using multi-dimensional arrays in NumPy, manipulate DataFrames in Pandas, use SciPy library of mathematical routines, and execute machine learning using Scikit-Learn

Perform data analytics using popular Python libraries

Data Analyst Master's Program Outcomes

Gain insights on several data visualization libraries in Python, including Matplotlib, Seaborn, and Folium

Gain an in-depth understanding of the basics of R, learning how to write your own R scripts

Master R programming and understand how various statements are executed in R

Who Should Enroll in this Program?

A career as a data analyst requires a foundation in statistics and mathematics. Aspiring professionals of any educational background with an analytical frame of mind are best suited to pursue the Data Analyst Master's Program, including:

- IT professionals
- Banking and finance professionals
- Marketing managers
- Supply chain network managers
- Beginners in the data engineering domain
- Students in UG/ PG programs

Introduction to Data Analytics

Simplilearn's Introduction to Data Analytics course will give you insights into applying data and analytics principles in your business. You will gain an understanding of the complete data analytics lifecycle, from problem definition to solution deployment. Through various industry-specific examples and case studies, you will learn how analytics, data visualization, and data science methodologies can be used to drive better business decisions.

Key Learning Objectives

- Understand how to solve analytical problems in real-world scenarios
- Define effective objectives for analytics projects
- Work with different types of data
- Understand the importance of data visualization to help make more effective business decisions
- Understand charts, graphs, and tools used for analytics and visualization and use them to derive meaningful insights
- Create an analytics adoption framework
- Identify upcoming trends in the data analytics field

Course curriculum

- Lesson 1 - Course Introduction
- Lesson 2 - Data Analytics Overview
- Lesson 3 - Dealing with Different Types of Data
- Lesson 4 - Data Visualization for Decision making
- Lesson 5 - Data Science, Data Analytics, and Machine Learning
- Lesson 6 - Data Science Methodology
- Lesson 7 - Data Analytics in Different Sectors
- Lesson 8 - Analytics Framework and Latest trends

Business Analytics with Excel

Business Analytics with Excel training will boost your analytics career with powerful new Microsoft Excel skills. This business analytics training course will equip you with the concepts and hard skills required for a strong analytics career. You'll learn the basic concepts of data analysis and statistics, helping promote data-driven decision making. Your new knowledge of this commonly used tool combined with official business analytics certification is guaranteed to ensure career success.

Key Learning Objectives

- Understand the meaning of business analytics and its importance in the industry
- Grasp the fundamentals of Excel analytics functions and conditional formatting
- Learn how to analyze with complex datasets using pivot tables and slicers
- Solve stochastic and deterministic analytical problems using tools like scenario manager, solver, and goal seek
- Apply statistical tools and concepts like moving average, hypothesis testing, ANOVA, and regression to data sets using Excel
- Represent your findings using charts and dashboards
- Get introduced to the latest Microsoft analytic and visualization tools, such as Power BI

Course curriculum

- Lesson 1- Introduction to Business Analytics
- Lesson 2- Formatting Conditional Formatting and Important Functions
- Lesson 3- Analysing Data with Pivot Tables
- Lesson 4- Dashboarding
- Lesson 5- Business Analytics with Excel
- Lesson 6- Data Analysis Using Statistics
- Lesson 7- Power BI

Programming Basics and Data Analytics with Python

Learn how to analyze data in Python using multi-dimensional arrays in NumPy, manipulate DataFrames in Pandas, use the SciPy library of mathematical routines, and perform machine learning using scikit-learn. This course will take you from the basics of Python to the many different types of data. You will learn how to prepare data for analysis, perform simple statistical analyses, create meaningful data visualizations, predict future trends from data, and more.

Key Learning Objectives

- Import data sets
- Clean and prepare data for analysis
- Manipulate Pandas DataFrame
- Summarize data
- Build machine learning models using scikit-learn
- Build data pipelines

Course curriculum

- Lesson 1 Course Introduction
- Lesson 2 Python Environment Setup and Essentials
- Lesson 3 Python Programming Fundamentals
- Lesson 4 Data Analytics Overview
- Lesson 5 Statistical Computing
- Lesson 6 Mathematical Computing using NumPy
- Lesson 7 Data Manipulation with Pandas
- Lesson 8 Data visualization with Python
- Lesson 9 Intro to Model Building

Tableau Training

This Tableau course helps you understand how to build visualizations, organize data, and design charts and dashboards to empower more meaningful business decisions. You'll be exposed to the concepts of Data Visualization, different combo charts, and stories, working with filters, parameters, and sets, and building interactive dashboards.

Key Learning Objectives

- Become an expert on visualization techniques such as heat map, treemap, waterfall, Pareto
- Understand metadata and its usage
- Work with Filter, Parameters, and Sets
- Master special field types and Tableau-generated fields and the process of creating and using parameters
- Learn how to build charts, interactive dashboards, story interfaces, and how to share your work
- Master the concepts of data blending, create data extracts and organize and format data
- Master arithmetic, logical, table, and LOD calculations

Course curriculum

- Lesson 01 - Getting Started with Tableau
- Lesson 02 - Core Tableau in Topics
- Lesson 03 - Creating Charts in Tableau
- Lesson 04 - Working with Metadata
- Lesson 05 - Filters in Tableau
- Lesson 06 - Applying Analytics to the worksheet
- Lesson 07 - Dashboard in Tableau
- Lesson 08 - Modifications to Data Connections
- Lesson 09 - Introduction to Level of Details in Tableau (LODS)

Data Analyst Capstone

This Data Analyst Capstone project will give you an opportunity to implement the skills you learned throughout this program. Through dedicated mentoring sessions, you'll learn how to solve a real-world, industry-aligned data science problem, from data processing and model building to reporting your business results and insights. This project is the final step in the learning path and will enable you to showcase your expertise in data analytics to future employers.

Programming Refresher

Programming is an increasingly important skill and this course will establish your proficiency in handling basic programming concepts. By the end of this program, you will understand object-oriented Programming; basic programming concepts such as data types, variables, strings, loops, and functions; and software engineering concepts such as multithreading and multitasking using Python.

Key Learning Objectives

- Obtain fundamental knowledge of programming basics
- Gain an understanding of object-oriented programming principles including data types, variables, strings, loops, and functions
- Comprehend software engineering concepts such as multithreading and multitasking using Python

Course curriculum

- Lesson 01 - Course Introduction
- Lesson 02 - Programming Basics

SQL Training

This course gives you the information you need to successfully start working with SQL databases and make use of the database in your applications. Learn the concepts of fundamental SQL statements, conditional statements, commands, joins, subqueries, and various functions to manage your SQL database for scalable growth.

Key Learning Objectives

- Understand databases and relationships
- Use common query tools and work with SQL commands
- Understand transactions, creating tables, and views
- Comprehend and execute stored procedures

Course curriculum

- Lesson 1- Fundamental SQL Statements
- Lesson 2-Restore and Back-up
- Lesson 3-Selection Commands: Filtering
- Lesson 4-Selection Commands: Ordering
- Lesson 5-Alias
- Lesson 6-Aggregate Commands
- Lesson 7-Group By Commands
- Lesson 8-Conditional Statement
- Lesson 9-Joins
- Lesson 10-Subqueries
- Lesson 11-Views and Index
- Lesson 12-String Functions
- Lesson 13-Mathematical Functions
- Lesson 14-Date and Time Functions
- Lesson 15-Pattern (String) Matching
- Lesson 16-User Access Control Functions

ELECTIVE

R Programming for Data Science

Gain insight into the R Programming language with this introductory course. An essential programming language for data analysis, R Programming is a fundamental key to becoming a successful Data Science professional. In this course, you will learn how to write R code, learn about data structures in R, and create your own functions. After completion of this course, you will be fully able to begin your first data analysis journey.

Key Learning Objectives

- Learn about key mathematical concepts, variables, strings, vectors, factors, and vector operations
- Gain fundamental knowledge on arrays and matrices, lists, and dataframes
- Get understanding of conditions and loops, functions in R, objects, classes, and debugging
- Learn how to accurately read text, CSV and Excel files, and how to write and save data objects in R to a file
- Understand and work on strings and dates in R

Course curriculum

- Lesson 01 - R Basics
- Lesson 02 - Data Structures in R
- Lesson 03 - R Programming Fundamentals
- Lesson 04 - Working with Data in R
- Lesson 05 - Stings and Dates in R

Data Science with R

The next step to becoming a Data Scientist is learning R—the most in-demand open source technology. R is a powerful Data Science and analytics language, which has a steep learning curve and a very vibrant community. This is why it is quickly becoming the technology of choice for organizations who are adopting the power of analytics for competitive advantage.

Key Learning Objectives

- Gain a foundational understanding of business analytics
- Install R, R-studio and workspace setup, and learn about the various R packages
- Master R programming and understand how various statements are executed in R
- Gain an in-depth understanding of data structure used in R and learn how to import/export data in R
- Define, understand, and use the various apply functions and DPLYR functions
- Understand and use the various graphics in R for data visualization
- Gain a basic understanding of various statistical concepts
- Understand and use hypothesis testing method to drive business decisions
- Understand and use linear and non-linear regression models, and classification techniques for data analysis
- Learn and use the various association rules and Apriori algorithm
- Learn and use clustering methods including K-Means, DBSCAN, and hierarchical clustering

Course curriculum

- Lesson 01 - Introduction to Business Analytics
- Lesson 02 - Introduction to R Programming
- Lesson 03 - Data Structures
- Lesson 04 - Data Visualization
- Lesson 05 - Statistics for Data Science I
- Lesson 06 - Statistics for Data Science II
- Lesson 07 - Regression Analysis
- Lesson 08 - Classification
- Lesson 09 - Clustering
- Lesson 10 - Association

Power BI

Microsoft Power BI is a suite of tools used to analyze data and extract business insights by building interactive dashboards. This Power BI Training course will help you get the most out of Power BI, enabling you to solve business problems and improve operations. This Power BI Training course will help you master the development of dashboards from published reports, discover greater insight from your data with Quick Insights, and learn practical recipes for the various tasks that you can perform with Microsoft Power BI—from gathering data to analyzing it. This course also contains some handy recipes for troubleshooting various issues in Power BI.

Key Learning Objectives

- Create dashboards from published reports
- Quickly generate visuals and dashboards with Quick Insights
- Use natural language in the Q&A feature to generate visuals for actionable insight
- Create and manage data alerts
- Get report layout and data visualization best practices
- Understand which charts/graphs to use depending on the question being answered or the story being told
- Use shapes to design, emphasize, and tell a story
- See how to incorporate custom visuals into your reports and dashboards
- Share reports and dashboards, including the pros and cons of each
- Complete a Power BI data analysis/visual project from start-to-finish
- Improve team collaboration with Microsoft Teams

- Know how to retrieve and prepare your data for analysis and visualization
- Learn how to create relationships between tables in your data model
- Create calculated columns and measures using the DAX language

Course curriculum

- Get and Prep Data like a Super-Nerd
- Lesson 2 - Develop Your Data-Nerd Prowess
- Lesson 3 - Generate Reports and Dashboards
- Lesson 4 - Tips & Tricks

Tools Covered

Projects

APP RATING RECOMMENDATIONS

The Google Play Store team is launching a new feature that boosts the visibility of certain promising apps. This boost will manifest in multiple ways, including higher priority placement in recommendations sections. Make a model to predict the app's rating, while providing other information about the app.

Domain: Technology

COMCAST TELECOM CUSTOMER COMPLAINTS

Comcast is an American global telecommunication company. The firm has been providing terrible customer service and they continue to fall short despite repeated promises of improvement. Utilize the existing database of customer complaints as a repository to improve customer satisfaction.

Domain: Telecommunications

ECOMMERCE SALES DASHBOARD

An online ecommerce company wants to design a sales dashboard to analyze sales based on various product categories. The company wants to make it easier for users to select the products they are looking for and consequently generate more sales. Help users select and review information about the products they are considering.

Domain: E-commerce

COMPARATIVE STUDY OF COUNTRIES

Create a dashboard to do a comparative study of different countries on various parameters using the sample insurance data set and world development indicators data set.

Domain: Geo-political

SALES PERFORMANCE ANALYSIS

Build a dashboard that shows monthly sales performance by the product segment and product category to help clients identify the segments and categories that have met, exceeded, or failed their sales targets.

Domain: Retail

ANALYSIS OF SALES REPORT OF A CLOTHES MANUFACTURING OUTLET

A high-end fashion retail store is looking to expand its product line. It wants to understand the market and find the current trends in the industry. Automate the recommendations for attributes of the products, predict sales trends, understand the factors of sales, and regularize the rating procedure of the product with the given data sets.

Domain: Manufacturing

COLLEGE ADMISSION

Every year, thousands of applications are submitted by international students for admission to colleges in the U.S. It becomes an iterative task for the U.S. Department of Education to know the total number of applications received and then compare that data with the total number of applications successfully accepted and visas processed. To make the entire process easy, the U.S. Department of Education is looking to analyze the factors that influence the admission of a student into colleges.

Domain: Education

IDENTIFYING AND RECOMMENDING BEST RESTAURANTS

A restaurant consolidator is looking to revamp their B2C portal using intelligent automation technology. This requires creating two different matrices to identify "high-star" restaurants and generate recommendations. To create an effective model, it is critical to understand the behavior of the consumers who are generating the data. You are required to create reports on the top-rated restaurants, generate recommendations by inspecting data and utilizing exploratory data analysis, and share your findings with all stakeholders through intuitive dashboards.

Domain: Food

PREDICTING LOAN DEFAULTERS

Financial institutions incur significant losses due to the defaults on vehicle loans. This has led to the tightening up of vehicle loan underwriting and increased loan rejection rates. The need for a better credit risk scoring model among these institutions is evident. This warrants a study to estimate the determinants of vehicle loan defaults. Determine and examine factors that affect the ratio of vehicle loan defaults. Also, use the findings to create a model to predict potential defaults on agreements.

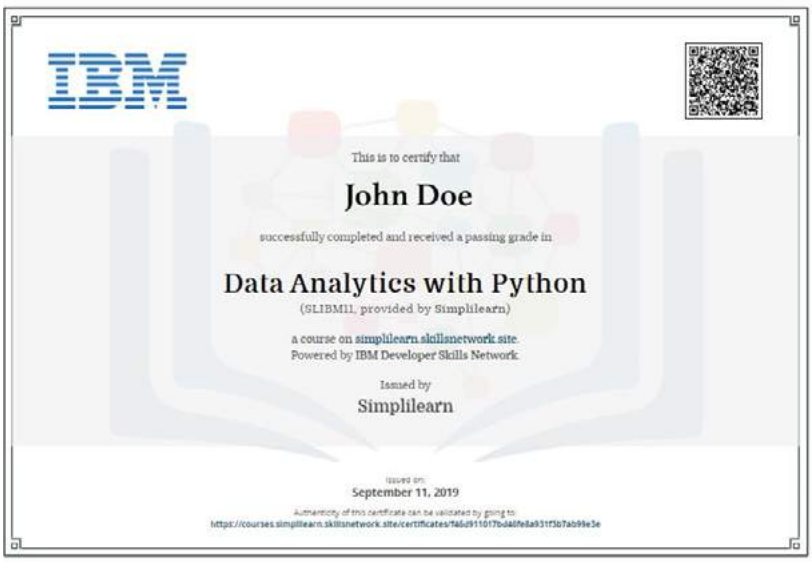
Domain: Banking

EXAMINING FACTORS RESPONSIBLE FOR HEART ATTACKS

Cardiovascular diseases are one of the leading causes of death globally. To identify the causes and develop a system to predict potential heart attacks in an effective manner is critical. The data presented has all the information about relevant factors that might have an impact on cardiovascular health. The data needs to be studied in detail for further analysis. Determine and examine the factors that play a significant role in increasing the rate of heart attacks. Also, use the findings to create and predict a model.

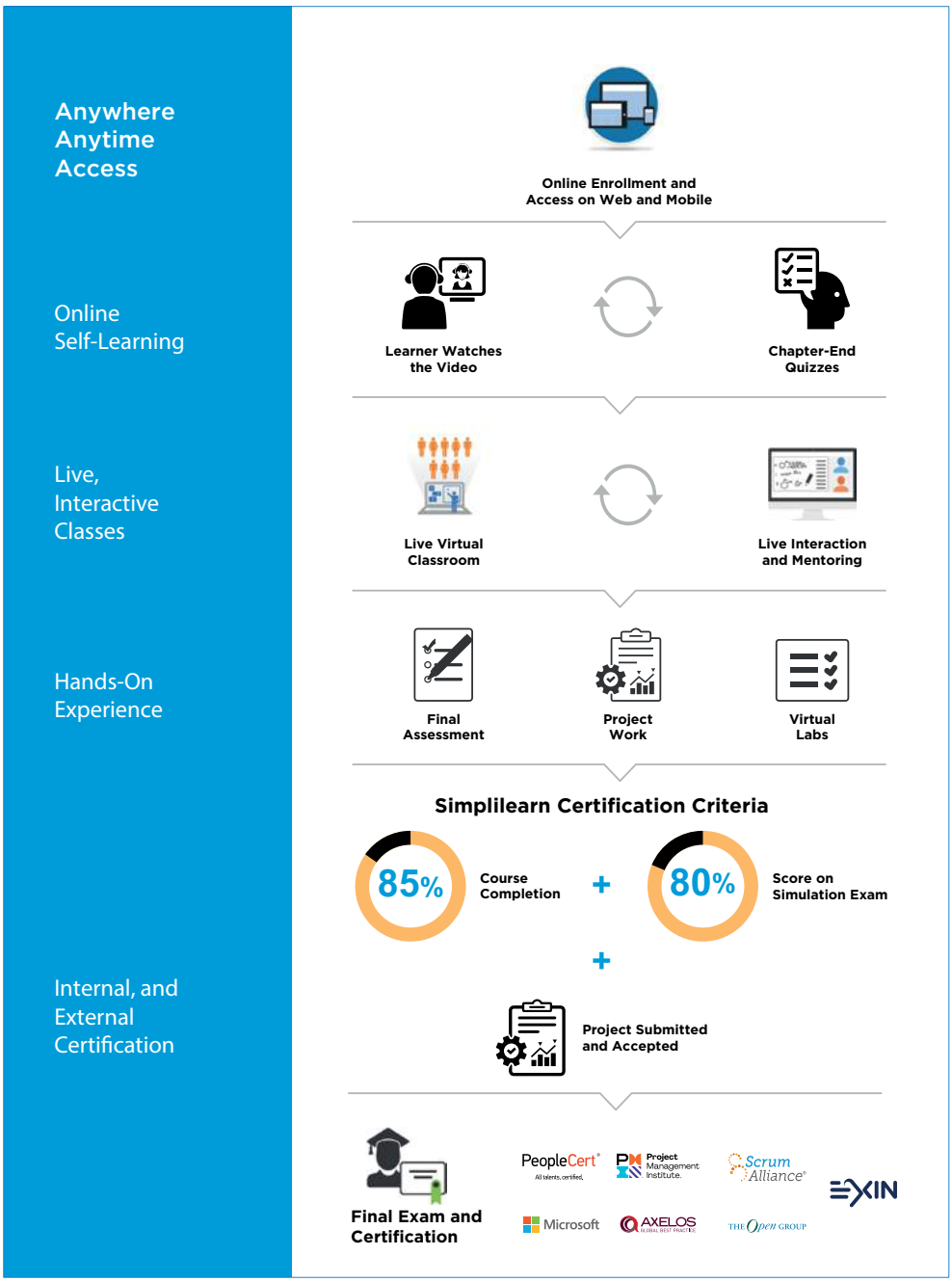
Domain: Healthcare

Certificates



Upon completion of this Master's Program, you will receive certificates from IBM and Simplilearn in the Data Analyst courses in the learning path. These certificates will testify to your skills as an expert in data analysis. Upon program completion, you will also receive an industry-recognized Master's Certificate from Simplilearn.

Classroom-Level Immersion: Delivered Digitally



Customer Reviews

Vinay Salve

Data Science and Business Analytics
The Sparks Education

I'm happy to share that I have completed my Master's program in Data Analysis and Business Analytics with Simplilearn. It was a fantastic learning experience, and I would like to thank Simplilearn for letting me acquire this new skill. I'm also glad that I have come across several new connections.

Manish Beniwal

Advisor Reporting - Global Mobility
Rio Tinto

I am a Data Analyst with 7 years of work experience, but I didn't have the chance to work with Statistics. So I enrolled in this course. It's a good course even for beginners. Overall, the training is very good. Thank you Simplilearn.

Ravi Chandra

IBM certified Solutions Expert

The course was excellent. Appreciate the trainer's capability to answer all the queries. Thanks to Simplilearn for such good course content.

Amol B

Associate Manager
Firepro Systems

Simplilearn is an awesome learning platform. The course content is very well designed, and the live classes have personal attention in resolving the doubts. Thanks, Simplilearn.

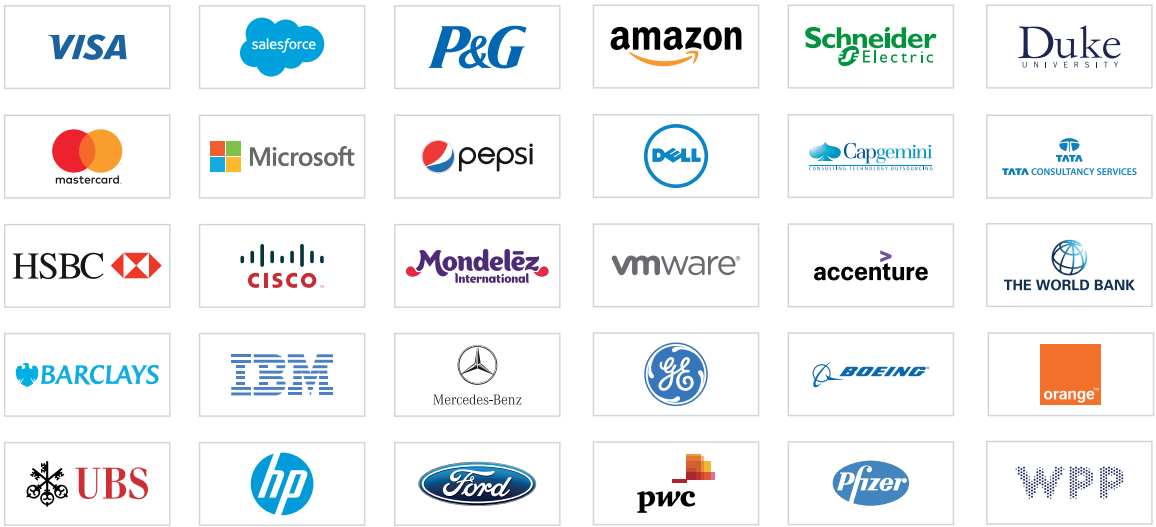
Hariharan Krishnaswamy

Program Manager

I was working as a business analyst at HCL. The Simplilearn course taught me to think about the bigger picture. The learnings from this course have helped me enhance my performance at work and gain a mid-term increase in my salary.

Corporate Training

Top clients we work with:



Features of Corporate Training:

- Tailored learning solutions
- Flexible pricing options
- Enterprise-grade learning management system (LMS)
- Enterprise dashboards for individuals and teams
- 24X7 learner assistance and support

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