



## 2023 Education Brochure



# Welcome to **Blue Nile Analytica**

I am thrilled to introduce Blue Nile Analytica, a company established with a mission to empower institutions in Africa to meet the growing demand for Data Science professionals in the job market.

Data Science is rapidly transforming every sector, and there is a critical need for institutions to equip their students with the necessary knowledge and skills to succeed in today's data-driven world. However, many institutions face challenges in keeping up with the latest trends and technologies in Data Science, and this is where Blue Nile Analytica comes in.

Our company is dedicated to bridging the gap between academia and industry by providing cutting-edge training, consulting, and recruitment services. We work closely with institutions to understand their specific needs and goals, and we tailor our solutions to meet those needs.

Our team consists of experienced Data Science professionals who are passionate about sharing their knowledge and expertise with the next generation of Data Science professionals. We are committed to delivering high-quality services to our clients, and we are constantly staying up-to-date with the latest trends and technologies in Data Science.

At Blue Nile Analytica, we believe that Data Science has the power to transform Africa, and we are proud to play a part in shaping the future of Data Science education and employment in Africa.

Thank you for your interest in Blue Nile Analytica. We look forward to working with you to empower institutions in Africa to meet the demand for Data Science professionals in the job market.



*Pius Odhiambo*

Director General, Blue Nile Analytica

# Who We Are.

Blue Nile Analytica is a data science and technology related company registered in the Republic of Kenya. The name Blue Nile Analytica is derived from the name of the longest river in Africa (River Nile). River Nile is historically considered the longest river in the world. It flows from Lake Victoria in Uganda through Southern Sudan, Sudan, Egypt and finally into Mediterranean Sea. Communities living around the river depends on it for their livelihood. Its water is Blue.

We are a team of experienced Data Science professionals, educators, and consultants, passionate about sharing our knowledge and expertise with the next generation of Data Science professionals. Our team has a deep understanding of the latest trends and technologies in Data Science, and we are dedicated to delivering high-quality services to the people we serve.

## What we do.

Blue Nile Analytica under the leadership of Pius Odhiambo was established to empower institutions in Africa meet the demand for Data Science professionals in the job market. This will make Africa remain competitive as it joins the rest of the world in Data revolution era.

We offer a range of services designed to help institutions in Africa meet the demand for Data Science professionals in the job market. These services include:



### **Training:**

We provide cutting-edge training in Data Science, including courses in Data Analysis, Machine Learning, and Data Visualization. Our training programs are tailored to meet the specific needs of each institution, and we work closely with our clients to ensure that our training programs are effective and impactful. Our trainees range from University Students, Tertiary Colleges and Highly motivated High School students who would then be able to acquire the technological skills demanded by the growing tech industry.



### **Consulting:**

We offer consulting services to institutions seeking to optimize their operations using Data Science. Our team works closely with our clients to understand their specific needs and goals, and we develop customized solutions to help them achieve their objectives.



### **Student Recruitment and Staffing:**

We provide recruitment services to organisations seeking to hire Data Science professionals all over Africa. Our team has a deep understanding of the Data Science job market in Africa, and we work closely with our clients to identify and recruit top talent.

# The Leadership.

The company has 4 Directors, 1 administrator and 15 Management trainees. The company intends to roll out 3 signature programs for workforce development in collaboration with the Universities, National Polytechnics, and like minded Institutions. The 3 programs are :

1. Certificate in Data Analytics & Visualization
2. Associate Certificate in Data Analytics & Visualization
3. Advance Certificate in Data Analytics & Visualization



**Mr. Pius Odhiambo** is a Senior Data Scientist Consultant based in Washington DC, in the United States of America.

Mr. Odhiambo holds a Bachelors degree in Education Science ( Mathematics / Statistics and Physics) from Kenyatta University, Masters of Science in I.T. (Database Systems Technology Specialization) from the University of Maryland Global Campus in Adelphi, USA, Post Graduate Diploma in Artificial Intelligence and Machine Learning from University of Texas at Austin in Texas, USA and is currently a Doctor of Science in Computer Science (Artificial Intelligence & Machine Learning specialization) student at Bowie State University, in Bowie, Maryland, USA where his area of research is in Natural Language Processing.



**Levi Bushuru**

Director, Blue Nile Analytica



**Geoffrey Odallo**

Director, Blue Nile Analytica



**Reuben Chemitei**

Director, Blue Nile Analytica



# Work Force Development Programs

## Enrollment Minimum Requirements:

- Working Professionals with inadequate background in Data Science
- Recent University Graduates that intend to enter the job market as Data Professionals

### Signature Programs

1. Certificate in Data Analytics & Visualization
2. Associate Certificate in Data Analytics & Visualization
3. Advance Certificate in Data Analytics & Visualization

### Admission Requirements

Bachelor's degree in Quantitative field from a recognized University or its equivalent

## **WFDP 1**

---

### **Certificate in Data Analytics & Visualization**

#### **Requirements for Graduation**

1. Passed Data Science 1, 2, 3 and 4
2. Passed Certification Exams in Python Programming from the International Python Institute
3. Passed Oracle Database SQL Certified Associate
4. Passed Domain based Capstone Project designed collaboratively with the industry practitioners.

## **WFDP 2**

---

### **Associate Certificate in Data Analytics & Visualization**

#### **Requirements for Graduation**

1. Passed Data Science 1, 2, 3, 4, 5, 6, 7 and 8
2. Passed Certification Exams in Python Programming from the International Python Institute (Entry level & Associate level)
3. Certified associate in data Analytics with Python
4. Passed Oracle Database SQL Certified Associate
5. Microsoft Certified: Power BI Data Analyst Associate
6. Passed Domain based Capstone Project designed collaboratively with the industry practitioners.

## **WFDP 3**

---

### **Advance Certificate in Data Analytics & Visualization**

#### **Requirements for Graduation**

1. Passed Data Science 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11 or 12
2. Passed Certification Exams in Python Programming from the International Python Institute (Entry level, Associate level and Professional level)
3. Passed Certified associate in data Analytics with Python from International Python Institute
4. Passed Oracle Database SQL Certified Associate
5. Passed Microsoft Certified: Power BI Data Analyst Associate
6. Passed Oracle Database SQL Certified Professional level
7. Passed Domain based Capstone Project designed collaboratively with the industry practitioners.

# Work Force Development Program Courses Description

## DSM 001: Advanced Excel Functions

### Course Outline

- IF function
- SumIfS
- CountIfS
- Trim
- Concatenate
- Left / Right
- Vlookup
- Xlookup
- IfError
- Value
- Unique
- Sort
- Filter
- Linear regression using Excel
- Power Query
- Box Plots ( Q1, Q2, Q3 , Q4)
- Outlier Detection using Boxplots
- Removing noise using moving averages
- Computing Z Scores

---

## DSM 002: Python Programming

### Certification : International Python Institute

PCEP Entry level Python programmer certification (PCEP-03-01/02 certification) has 30 questions as detailed below -

#### 1. Module 1: Basic Concepts (5 questions)

- Basic concepts
- Interpreter, compiler, lexis, semantics, syntax, Keywords, etc.
- Literal - Integer, Boolean, Floats, scientific notation, string
- comment
- print()
- input()
- Other numeral systems - binary, decimal, octal, and hexadecimal
- Arithmetic(numeric) operators → +, -, , /, //, %, \*
- String Operators: +, \*
- assignments and shortcut operators

## 2. Module 2: Data Types, Evaluations, and Basic I/O Operations (6 Questions)

- operators: unary and binary, priorities and binding
- bitwise operators: ~ & ^ | << >>
- Boolean operators: or, and, not
- Boolean expressions
- Relational operators ( == != > >= < <= ), building complex Boolean expressions
- Accuracy of floating-point numbers
- basic i/o (input and output) operations using - input(), print(), int(), float(), str(), len() functions
- Format print() output with end= and sep= arguments
- type casting
- basic calculations
- simple strings: constructing(create), assigning, indexing, immutability

## 3. Module 3: Control Flow – loops and conditional blocks (6 questions)

- conditional statements: if, if-else, if-elif, if-elif-else
- multiple conditional statements - multiple if statement
- the pass instruction
- Loops: while, for, range(), in
- Iteration - iterating through sequences
- loops continued: while-else, for-else
- nesting loops and conditional statements
- controlling loop execution: break, continue

## 4. Module 4: Data Collections – Lists, Tuples, and Dictionaries (7 questions)

- simple lists: constructing vectors, indexing, and slicing, the len() function
- lists in detail: indexing, slicing, basic methods (append(), insert(), index()) and functions (len(), sorted(), etc.), del instruction, iterating lists with the for loop, initializing, in and not in operators, list comprehension, the difference between copying and cloning
- lists in lists: matrices and cubes
- tuples: indexing, slicing, building, immutability
- tuples vs. lists: similarities and differences, lists inside tuples and tuples inside lists
- dictionaries: building, indexing, adding and removing keys, iterating through dictionaries as well as their keys and values, checking key existence, keys(), items(), and values() methods
- strings in detail: escaping using the \ character, quotes, and apostrophes inside strings, multi-line strings, basic string functions.

## 5. Module 5: Functions (6 questions)

- define and call(invoking) your own functions(user-defined functions) and generators
- return and yield keywords, returning results,
- the None keyword,
- recursion
- parameters vs. arguments,
- positional keyword and mixed argument passing,
- default parameter values
- converting generator objects into lists using the list() function
- name scopes, name hiding (shadowing), the global keyword
- PCEP Certification: Exam Information
- Exam Name: PCEP Certified Entry-Level Python Programmer
- Exam Code: PCEP-30-01 / 02
- Exam Level: Entry
- Pre-requisites: None
- Duration: 45 minutes (exam) + approx. 5 minutes (Non-Disclosure Agreement/Tutorial)
- Number of Questions: 30
- Format: Single-choice and multiple-choice questions, drag & drop, gap fill | Python 3. x
- Passing score: 70%
- Language: English
- Delivery Channel: OpenEDG Testing Service
- PCEP certification is a professional Entry-Level Python Programmer Exam to test a person's ability to understand basic coding related to Fundamentals of Python Programming. The candidate will gain all the necessary knowledge of Python Programming, its syntax, semantics, and basic concepts like the below -
- Concepts like - literals, print(), input(), numbers, strings, etc.
- knowledge of operators - unary, binary, bitwise, boolean, relational operators, simple strings, data type, evaluation, I-O, etc.
- Control Flow - Loops, If, While, for, break, continue, pass
- Data collections - Lists, tuples, dictionaries, strings
- Functions - Arguments, Parameters, recursion, scope, global, positional arguments, Keyword arguments, None, yield, default parameter, etc.

## DSM 003: Python for Data Science

Certification : International Python Institute

(ExamPCAD-31-0x)

PCAD™ – Certified Associate in Data Analytics with Python certification validates that the individual demonstrates proficiency in Python **data acquisition, cleaning, manipulation, modeling, analysis, and visualization techniques**. The credential confirms the holder's expertise in the field of data analytics, such as decision-making under uncertainty, data-based decision-making, predictive modelling, and model selection, as well as measures their skills in using Python for file processing and performing programming operations with the use of the NumPy, Pandas, Matplotlib, Seaborn, and SciKit-Learn libraries.

PCAD™ certification gives its holders confidence in their data analytics and programming skills, helps them stand out in the job market, and gives them a head start on preparing for and advancing to the professional level.

PCAD™ – Certified Associate in Data Analytics with Python certification (Exam PCAD-31-0x) is a professional, high-stakes credential that measures the candidate's ability to perform Python coding tasks related to mining, importing, cleaning, and preparing data for analysis, manipulating data and performing statistical analyses on them, summarizing and visualizing datasets, using simple machine learning algorithms to perform predictive data modeling, and building Python solutions for data science purposes.

The PCAD™ certification shows that the individual is familiar with the following concepts: basic concepts, methodologies, and best practices in data analytics, data extraction and mining, file processing (csv, html, json, data analytics with NumPy and Pandas, data visualization with Matplotlib and Seaborn, machine learning and data modeling with SciKit-Learn.

Becoming PCAD™ certified ensures that the individual possesses comprehensive knowledge of data analytics concepts, methodologies, and best practices, as well as they are fully acquainted with all the primary means provided by Python 3 for the purposes of carrying out data analysis operations to enable them to start their own studies at an advanced level, and to open a path to the data scientist's career.

PCAD™ certification is an interim step to the PCPD™ certification, a great motivator for self-improvement and self-development, and most importantly – the means to keep one's Python data science skills up to date and demonstrate them to others. Becoming PCAD™ certified reflects the candidate's interest in developing a specialized proficiency in using Python for the purposes of data analysis, as well as their ability to use it for commercial and non-commercial data analytics projects, and create, develop, and improve their own programming portfolio to increase their value in the job market.



# DSM004: Oracle Database Administration Associate

Certification : Oracle Database SQL Certified Associate

## Oracle Database SQL Certified Associate (1Z0-071)

In this entry-level Oracle Database Associate training,

### 1Z0-071: What You Need to Know

For any data analyst using this training for exam preparation, our Oracle Database SQL Certified Associate course maps to the Oracle 1Z0-071 exams objectives, and covers topics such as:

- Learn about Relational Databases
- Tables, views, and queries in Relational DBs
- Introduction to Structured Query Language (SQL)
- Oracle Database Structure and Schema
- Aggregating, Manipulating, and Retrieving Data
- Restricting and sorting query results

### Who Should Take 1Z0-071 Training?

This Database Associate training is considered associate-level Oracle training, which means it was designed for data analysts, database administrators, and anyone who needs to learn the Oracle SQL query language. This 1Z0-071 course is valuable for new IT professionals with at least a year of experience with Oracle database and experienced data professionals looking to validate their Oracle skills.

New or aspiring data professionals. This SQL training is perfect for anyone trying to learn the language. Ben starts with the basics of relational databases, like proper database structure and schema, works his way into inserting and updating data, and then gets into sorting with queries. Even though you'll be working on an Oracle database in the six virtual labs, you'll be able to use your new SQL skills across platforms.

Experienced data professionals. Data analysts or database administrators with a few years of experience should be pretty comfortable with the Oracle infrastructure aspects of this Oracle training. However, this is primarily a SQL course – and there's plenty to learn when it comes to Oracle SQL. Ben covers the full range of DDL, DML, and TCL queries available with Oracle SQL and then gets into data aggregation, views, and maintaining Oracle database indexes. Experienced data professionals can use this SQL training to study for an Oracle exam, or simply as reference material developed by an Oracle expert.



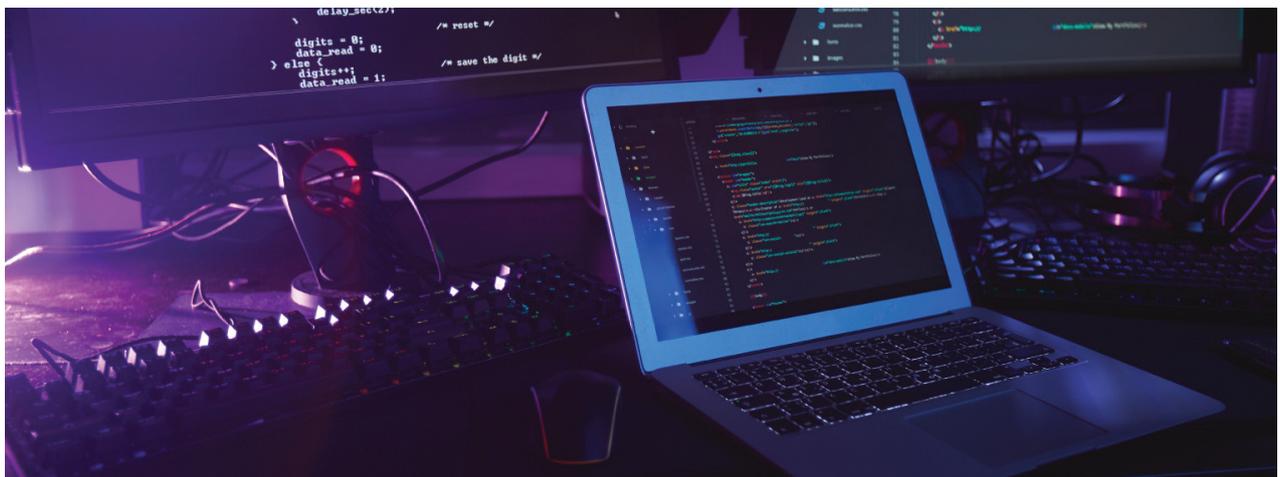
# DSM 005: R-Programming

## What You will Learn at a Glance

- Fundamentals of the R programming language using the RStudio environment
- Synchronous interaction of R with data sources, both local and online
- Application of R toward user interfaces and visualizations that render output meeting the user's preferences.
- The holistic process of traversing from initial concepts to tangible solutions

## Course Outline

- R Basics
- RStudio Libraries
- Programming Fundamentals: Variables, Conditionals, Looping, and Applying Working with Data
- SQL concepts
- Wrangling data (dplyr & tidyr)
- Database connections (RPostgres)
- R Graphics Charts with GGPlot2
- Geomapping with Leaflet
- Graph Networks with visNetwork
- The Shiny App: Options for projects Food delivery service app
- Football simulator app
- Stock analytics app
- Virus spreading forecast app
- Music selecting app
- The Shiny App: Deploying & sharing the app



## DSM 006: Python Programming

Certification : International Python Institute ( Associate level)

Certified Associate in Python Programming

(Exam PCAP-31-0x)

PCAP™ – Certified Associate in Python Programming certification focuses on the Object-Oriented Programming approach to Python, and shows that the individual is familiar with the more advanced aspects of programming, including the essentials of OOP, the essentials of modules and packages, the exception handling mechanism in OOP, advanced operations on strings, list comprehensions, lambdas, generators, closures, and file processing.

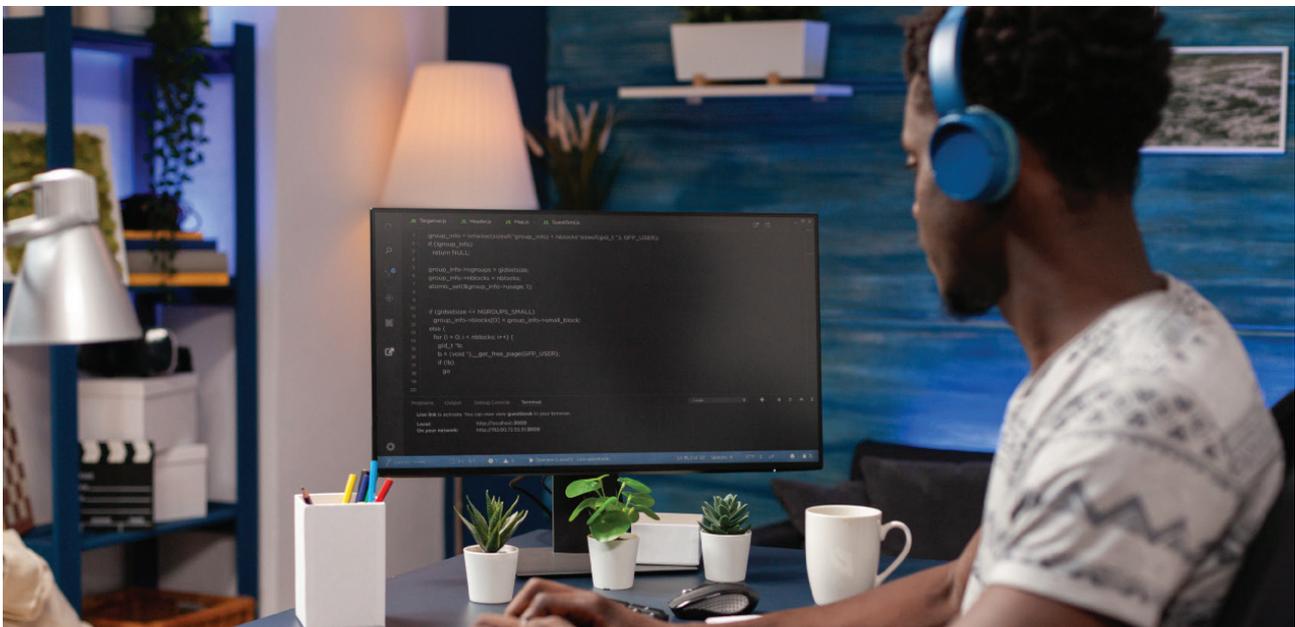
PCAP™ certification gives its holders confidence in their programming skills, helps them stand out in the job market, and gives them a head start on preparing for and advancing to the professional level.

**PCAP™ – Certified Associate in Python Programming certification (Exam PCAP-31-0x)** is a professional, high-stakes credential that measures the candidate's ability to perform intermediate-level coding tasks in the Python language, including the ability to design, develop, debug, execute, and refactor multi-module Python programs, as well as measures their skills and knowledge related to analyzing and modeling real-life problems in OOP categories with the use of the fundamental notions and techniques available in the object-oriented approach.

The PCAP™ certification shows that the individual is familiar with the following concepts: modules, packages, and PIP, character encoding, strings and string processing, generators, iterators, closures, files, file streams, and file processing, exception hierarchies, and exception classes and objects, working with selected Standard Library modules, and the fundamentals of the Object-Oriented Programming (OOP) approach.

Becoming PCAP™ certified ensures that the individual is fully acquainted with all the primary means provided by Python 3 to enable them to start their own studies at an advanced level, and to open a path to the developer's career.

PCAP™ certification is an interim step to the PCPP1™ certification, a great motivator for self-improvement and self-development, and most importantly – the means to keep one's programming skills up to date and demonstrate them to others. Becoming PCAP™ certified reflects the candidate's interest in developing a higher level of proficiency and a more in-depth understanding of Python, as well as their ability to use it for commercial and non-commercial general-purpose programming projects, and create, develop, and improve their own programming portfolio to increase their value in the job market.



# DSM 006a: Professional Python Programming 1

## Certification : International Python Institute

PCPP1™ – Certified Professional in Python Programming 1 certification is the first of the two-series General-Purpose Programming track professional credentials from the OpenEDG Python Institute addressed to developers, IT specialists, and working professionals looking to obtain an industry credential that documents their skills and expertise in the advanced and more specialized aspects of computer programming and the Python language.

The PCPP1™ certification shows that the individual demonstrates proficiency in the advanced use of classes and OOP features present at the heart of Python programming; knows, understands, and implements the coding conventions, design practices, and standards for code writing; knows how to build a GUI application using the most essential tools and toolkits, conventions, and elements of event-driven programming; understands the basic concepts of network programming and what data formats are used in client-server communication, knows how to use sockets and HTTP methods, and is able to create a simple REST client; knows how to use some of the most important Python Standard Library modules for file processing and interacting with a program's environment.

PCPP1™ – Certified Professional in Python Programming 1 certification (Exam PCPP-32-10x) is a professional credential that measures the candidate's ability to accomplish coding tasks related to advanced programming in the Python language and related technologies, advanced notions and techniques used in object-oriented programming, the use of selected Python Standard Library modules and packages, designing, building and improving programs and applications utilizing the concepts of GUI and network programming, as well as adopting the coding conventions and best practices for code writing.

The PCPP1™ certification shows that the individual is familiar with the following concepts: advanced use of classes and modelling real-life problems in the OOP categories (classes, instances, attributes, methods; class and instance data; shallow and deep operations; inheritance and polymorphism; extended function argument syntax and decorators; static and class methods; attribute encapsulation; composition and inheritance; advanced exceptions; copying object data; serialization; metaclasses), best practices and standardization (PEP8, PEP 257, code layout, comments and docstrings, naming conventions, string quotes and whitespaces, programming recommendations), GUI programming (events, widgets, geometry, tools and toolkits, conventions), the elements of network programming (network sockets, client-server communication, JSON and XML files in network communication, HTTP methods, CRUD, building a simple REST client), and file processing and communicating with a program's environment (processing files: sqlite3, xml, csv, logging, and configparser; communication: os, datetime, io, and time).

Becoming PCPP1™ certified ensures that the individual is fully acquainted with all the essential, intermediate, and advanced means provided by Python 3 and related technologies to enable them to advance their career as a professional Python developer and continue studies at the advanced level.

PCPP1™ certification is a professional high-stakes credential, an interim step to the PCPP2™ certification, and the means to demonstrate high-level Python expertise across multiple fields of programming in Python and using related technologies. Becoming PCPP1™ certified shows that the certification holder possesses a high degree of technical knowledge, work independence, and the

# DSM 007: Oracle Database SQL Certified Professional level

## Module 1: Introduction to Oracle Database 19c Administration

- Overview of Oracle Database Architecture
- Understanding Oracle Database Editions
- Preparing the Environment for Oracle Database Installation
- Installing Oracle Database 19c
- Configuring Oracle Net Services

## Module 2: Managing Oracle Database Instance

- Understanding Oracle Database Instance
- Managing Database Initialization Parameters
- Starting and Stopping the Database
- Managing Memory and Processes
- Managing Control Files, Redo Logs, and Archive Logs
- Managing Database Storage

## Module 3: Managing Oracle Database Storage Structures

- Understanding Oracle Database Storage Structures
- Managing Tablespaces and Data Files
- Managing Undo Data
- Managing Temporary Data
- Managing Oracle Database Files and Directories
- Managing Automatic Storage Management (ASM)

## Module 4: Managing Users and Security

- Understanding Oracle Database Security Concepts
- Managing Database Users and Roles
- Managing Privileges and Permissions
- Managing Passwords and Profiles
- Managing Audit Policies

## Module 5: Maintaining High Availability and Performance

- Implementing Backup and Recovery Strategies
- Performing Database Recovery
- Monitoring and Tuning Oracle Database
- Implementing Oracle Database High Availability
- Configuring Oracle Data Guard
- Implementing Oracle Database Replication

## DSM008: Power BI Data Analyst Associate

Certification : Microsoft Required exams: PL-300  
Microsoft Certified: Power BI Data Analyst Associate

### Certification details

Candidates for this certification deliver actionable insights by working with available data and applying domain expertise. They provide meaningful business value through easy-to-comprehend data visualizations, enable others to perform self-service analytics, and deploy and configure solutions for consumption.

The Power BI data analyst works closely with business stakeholders to identify business requirements. They collaborate with enterprise data analysts and data engineers to identify and acquire data. They also transform the data, create data models, visualize data, and share assets by using Power BI.

Candidates for this certification should be proficient at using Power Query and writing expressions by using Data Analysis Expressions (DAX). These professionals know how to assess data quality. Plus, they understand data security, including row-level security and data sensitivity.

### Skills measured

- This list contains the skills measured on the exam required for this certification. For more detailed information, visit the exam details page and review the study guide.
- Prepare the data
- Model the data
- Visualize and analyze the data
- Deploy and maintain assets

## DSM009: Tableau Data Analyst Associate

Certification : Tableau Data Analyst Certification

### Domain 1: Connect to and Transform Data

- Connect to data sources
- Prepare data for analysis
- Perform data transformation in Tableau Prep
- Customize fields

### Domain 2: Explore and Analyze Data

- Creating calculated fields
- Creating quick table calculations
- Creating and using filters
- Structuring the data

### Domain 3: Create Content

- Creating charts
- Creating dashboards and stories
- Adding interactivity to dashboards
- Formatting dashboards

### Domain 4: Publish and Manage Content on Tableau Server and Tableau Online

- Publishing Content
- Manage Published workbooks
- Create subscriptions

## DSM010: Business Statistics with Numpy

### Getting familiar with the terms

- Introduction to Data Science and modeling
- Descriptive statistics: Variance
- Concept of central values - Mean, Median and Mode with examples
- Distributions and characteristics of a well -defined the stable process
- Descriptive Statistics: Visualizing your Data using Pair plot
- Descriptive Statistics: Hands-on approach

### Inferential Statistics

- Hypothesis Testing: Null vs Alternate Hypotheses
- Chi-Square test- Definition, formula, and examples
- Normal Deviate Z Test - Definition, formula and examples
- Code Analysis: Understanding Statistics
- One sample t-test
- Types of t-tests: One tail & two-tail tests
- Analysis of Variance (ANOVA)
- Making Sense of the Two-Sample T-Test

## DSM011: Supervised Learning - Linear Regression

### Course Objectives

#### After completing this course, you will be able to:

- Understand the concepts of supervised learning, simple linear regression, and multiple linear regression
- Handle and process raw, unclean data to get it ready for analysis and modeling using Python
- Apply linear regression on real-world data and identify factors that will help drive business decisions
- Assess the model performance using different metrics

### Prerequisites

- Participants are expected to have basic knowledge of mathematical concepts such as basic calculus (derivatives) and descriptive statistics.
- Participants are expected to have a working knowledge of Python data structures (lists, tuples, dictionaries), coding concepts (conditional statements, looping statements, list comprehensions), and Python libraries such as pandas, numpy, matplotlib, and seaborn.
- Participants are expected to be comfortable with installing Python packages and reading the Python documentation.

## Topics Covered

- **Introduction to Supervised Learning: Linear regression**

- Introduction to learning from data
- Simple Linear Regression
- Multiple Linear Regression
- Evaluating a regression model
- Pros and Cons
- Hand-on Linear Regression

- **Data Preprocessing**

- Data Manipulations
- Dealing with Text Data
- Missing Value Treatment
- Feature Engineering Basics and Variable Transformation
- Variable Scaling
- Encoding Categorical Data
- Outlier Identification and Treatment

## DSM012: Supervised Learning - Logistic Regression

### Overview

In the previous courses we have learnt about data pre-processing, making interpretations from the data and building supervised learning model using Linear Regression, where the target variable is continuous in nature. However, in many business problems the target variable is not continuous in nature and consists of categorical or discrete data types, in such cases we will need algorithms that can predict categories or classes. Such algorithms that can predict categorical labels are called classification algorithms.

Supervised Learning Classification course will leverage the power of data with known outcomes to make models and predict categorical labels for unseen data. This course will focus on training, assessing and interpreting the outputs of the classification models like Logistic Regression and Decision Trees, which will enable businesses to make effective data-driven decisions.

### Course Objectives

#### After completing this course, you will be able to:

- Understand and appreciate the most widely used machine learning algorithms for classification problems - Logistic Regression, and Decision Tree.
- Interpret the results of a Logistic Regression model.
- Interpret and visualize the results of a Decision Tree model.
- Assess the model performance of a classification model using different performance metrics.
- Tune models to improve model performance.

## Prerequisites

- Participants are expected to have knowledge of basic concepts such as linear regression
- Working knowledge of important Python libraries such as statsmodels, sklearn, pandas, numpy, matplotlib, and seaborn is required
- Participants are expected to be comfortable with installing Python packages and reading the Python documentation.

## Topics Covered

### • **Logistic Regression**

- Introduction to Logistic Regression
- Changing threshold of a Logistic Regression model
- Evaluation of a classification model
- Pros and Cons
- Hand-on Logistic Regression



Get In Touch Today

[www.bnanalytica.org](http://www.bnanalytica.org)  
[info@bnanalytica.org](mailto:info@bnanalytica.org)

