
DATA ANALYSIS & VISUALIZATION 101

ONLINE BOOTCAMP

DETAILED SYLLABUS

March 7 - March 13

Overview

In our endeavour to build data culture and democratize Data Science learning, we are launching a 'Data Analysis and Visualization 101' bootcamp with the help of academia and industry experts. The online bootcamp will have a series of day-wise learning modules/challenges and live sessions by data science experts.

In this bootcamp, you'll be able to grasp the fundamentals of Python data structures, analysing and visualizing data using some of the most important libraries like numpy, pandas, matplotlib, seaborn, etc., that will aid your Data Science journey and get you started with building the required industry skills.

This is a community initiative, driven by experts and mentors, and you have the opportunity to attend it for free.

Prerequisites (not a must)

- Knowledge of Python
- Jupyter Notebook/ Google Colab
- Enthusiastic learning spirit (a must)

Pre-Work:

Setting up the environment to code first program in Python

Understand the Python basics and the working environment that will be useful across the whole Bootcamp.

LEARNING OUTCOMES

<p>Pre-work</p>	<p>Introduction to Python and its Data Structures</p>	<ul style="list-style-type: none"> • What is Python? • Why Python for Data Science? • Introduction to Anaconda & Jupyter Notebooks • Python and Anaconda Installation • Introduction to Google Colab • Print your first program - "Hello World!" • Variables, operators & Data types in Python • Data Structures & Data types • Introduction and implementation of Dictionary, Tuple and List in Python • Using Strings • Python Packages and Functions • Functions and Methods: are they the same?
-----------------	--	---

Day-wise Learning Outcomes:

LEARNING OUTCOMES

Day 1	Data Analysis and Diving into Pandas	<ul style="list-style-type: none"> • What is Data Analysis? • Why Pandas? Understand with use cases • Pandas operations • Working with CSV files
Day 2	Introduction to Visualization using Matplotlib	<ul style="list-style-type: none"> • Introduction to basic plots and matplotlib • Changing the size of the plots and plotting consecutive plots • Learn how to make the plots look visually appealing • Creating multiple plots
Day 3	Reading and Self-Practice Day	<ul style="list-style-type: none"> • Complete the notebooks, exercises and reading materials for better practice.
Day 4	Deep dive into Visualization using Matplotlib and Seaborn	<ul style="list-style-type: none"> • Introduction to Seaborn • Outliers • Understand your data better with Scatterplot and Line plot. • What is correlation? Learn it with Heatmaps. • Understand the difference between Positive and Negative correlation. • Introduction to advance plots - violin plot, dist plot, etc., along with understanding where to use it.
Day 5	Dynamic Visualization with Bokeh and Plotly	<ul style="list-style-type: none"> • Take your plots one step forward with Bokeh and plotly • Learn handling and plotting data using Bokeh and Plotly.
Day 6	Reading and Self-practice Day	<ul style="list-style-type: none"> • Complete the notebooks, exercises and reading materials for better practice.
Day 7	Final Project	<ul style="list-style-type: none"> • Get your hands dirty with applied problem-solving.

