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| 10:00 – 11:30 AM | Session 1: Teaching Python for Business Analytics | - Why Python in MBA- Basics of Python (variables, data types, loops)- Using libraries like pandas, matplotlib- Sample use case: Analyzing sales data | Demo + Hands-on |

**Detailed Agenda**

1. Some Python Facts!
2. Why has Python become so popular?
3. Why Python in MBA?
4. Python Basics:
   * Variables
   * Operators
   * List
   * Set
   * Tuple
   * Dictionary
   * Decision Making
   * Loops
   * Numpy
   * Scipy
5. Python Advances:
   * Pandas – Series
     + Create a Series from ndarray
     + Create a Series from a dictionary
     + Create a Series drom scalar
   * Pandas – DataFrame (DF)
     + Create a DF from a list
     + Create a DF from a list of lists
     + Create a DF from a dictionary
     + Create a DF from a list of dictionaries
     + Addition and Deletion of columns
     + Selection of rows
     + Addition and Deletion of rows
   * Reading a file in Pandas
     + Head and Tail Representation
     + Data Description
     + Pair Plot
     + Correlation
   * Example of Matplotlib charts

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| 11:45 AM – 1:15 PM | Session 2: Classroom Applications of Python | - Teaching strategies for Python- Integrating with case studies- Classroom assessment ideas- AI tools (e.g., ChatGPT + Python) for teaching support | Group Activity + Discussion |

1. Exploratory Data Analysis (EDA) – Training and Testing both Dataset
2. Linear Regression Model

* Training module
* Predict module
* Validation module
* Conditional training / testing

1. Non-Linear Regressor like Random Forest Regressor Model

* Training module
* Predict module
* Validation module

1. Train a Time-series model on the data taking time as the only feature

* Seasonal Decomposition
* ARIMA

1. Dimensional Reduction techniques like, PCA
2. Cluster stores using sales and customer visits as features. Find out how many clusters or groups are possible

* Using the elbow method to find the optimum number of clusters
* Random Forest Regression Model on cluster level

Link:

1. <https://www.w3schools.com/python/python_variables.asp>
2. <https://static.realpython.com/python-basics-sample-chapters.pdf>
3. <https://cfm.ehu.es/ricardo/docs/python/Learning_Python.pdf>