**Programmer’s Den**

“Practical Knowledge > Theoretical Knowledge”

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**Machine Learning using Python**

**Batch Contents: -**

**Module 1: Python Programming Language**

* History of Python Programming Language.
* Introduction To Python.
* Features of Python.
* Toolchain of Python.
* Implementation of Python.
* Installation of Python and IDE
* Data Types in Python
* Variable Declaration in Python
* Flow Control Statements (loops) in Python
* Selection Statements (if else if ladder, Switch case) in Python
* Functions in Python
* Anonymous Functions (Lambda Functions in Python)
* Constants in Python
* Packages in Python
* Import/Export in Python
* I/O Operations in Python
* Arrays in Python
* List in Python
* Tuple in Python
* Sets in Python
* Dictionary in Python
* Data Structures in Python
* File Handling and manipulation (I/O) using Python.
* Recursion in Python
* OOPS Concepts in Python
* Filter, Map, Reduce in Python
* Decorators in Python
* Duck Typing in Python
* Exception Handling in Python
* Multithreading Programming in Python
* Multitasking Programming in Python
* Multiprocessing Programming in Python
* Parallel Programming in Python
* Thread Synchronization in Python

**Module 2: Machine Learning**

* Machine Learning Concept
* Types of Machine Learning
* Introduction to Data Science
* Types of Data
* Data set and its classification
* Volume, Velocity and Variety of data
* Features and Labels of Dataset
* Training and Testing Dataset
* Split activity to Divide Dataset
* Data Sources
* Data cleaning
* Data manipulation Techniques
* Data representation Techniques
* Data analysis Techniques
* Data Storage Techniques
* Loading Dataset
* Cleaning Dataset
* Development phases of Machine learning applications
* Concept of Supervised Machine Learning
* Concept of Unsupervised Machine Learning
* Libraries used for Machine Learning
* Introduction to pip utility
* Environment setup for Machine Learning
* Pandas’ library Installation
* Dataset manipulation using panda’s library.
* Series, Data Frame and Panel in Pandas
* NumPy installation
* Numeric Calculations using python.
* SciPy installation
* Installation of Matplot library
* Visualization Techniques using matplotlib.
* Supervised Machine learning using Classification
* Decision Tree algorithm for classification
* K Nearest Neighbor algorithm for classification
* Implementation of K Nearest Neighbor algorithm
* Support Vector Machine Learning algorithm for supervised Machine Learning
* Supervised Machine Learning using Regression
* Types of Regression
* Liner Regression algorithm
* Implementation for Linear Regression algorithm
* Logistic Regression algorithm
* Ensemble Machine Learning Techniques
* Boosting Classifier and Bagging Classifier algorithm for Ensemble Machine Learning Techniques
* Unsupervised Machine Learning using Clustering
* Typed of Unsupervised Machine Learning algorithms
* K Means algorithm for clustering
* Implementation of K Means algorithm.
* Elbow Method for Finding k value.
* Accuracy Calculation for Machine Learning algorithm
* Classification of Dataset for Supervised and Unsupervised Machine Learning

**Note:**

* During Lectures You Have to Do Parallel Coding with Teacher for Better Understanding of All Above Concepts.