ADVANCED PYTHON PROGRAMMING

During these classes, students will explore advance Python concepts such as data types, type casting, basic data structures like tuples, lists and dictionaries. This course also gets them ready for the AI and machine learning module in which they will be exploring the CV2 library of Python.

SESSION	CONCEPT	SKILLS
01	Communicate With Computer - I	**Comprehension** Introduction to Python coding.
02	Communicate With Computer - II	**Comprehension, Logic, Creativity** Variables , Data types , Applications.
03	Operators And Conditional Statements - I	**Comprehension, Logic, Creativity** Larning about various operators and conditional statements.
04	Operators And Conditional Statements - II	**Logic, Creativity** Creating an invoice or a calculator project by using Python commands .
05	Introduction To Loops, For Loops - I	**Comprehension, Logic, Creativity** Learning about For loops - meaning, application.
06	Introduction To Loops, For Loops - II	**Logic, Creativity** Writing Python code using For loops.
07	Formative Assessment	**Assessment Of Learning**
08	Nested Loops	**Comprehension, Logic, Creativity** Learning about Nested loops - meaning, application.
09	While Loop - I	**Comprehension, Logic, Creativity** Learning about Nested loops - meaning, application.
10	While Loop - II	**Logic, Creativity** Writing Python code using While loop.

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11	Dictionaries And Functions - I	**Comprehension, Logic, Creativity** Learning about Dictionaries and Functions in Python.
12	Dictionaries and Functions - II	**Logic, Creativty** Writing Python code using Dictionaries and Functions.
13	**Formative Assessment**	**Assessment Of Learning**
14	Algorithms And Debugging Your Programs	**Sequencing, Problem Solving** What is Algorithm ? How to write Algorithm / Pseudocode ? How to debug a code ?
15	Lists - I	**Comprehension, Logic, Creativity** Learnng about Lists : Introduction, Methods of representation, Use.
16	Lists - II	**Comprehension, Logic, Creativity** Learnng about Lists : Introduction, Methods of representation, Use.
17	2D Lists	**Problem Solving, Data Manipulation** Logic Creation of 2D List(Array) and accessing elements.
18	Strings - I	**Comprehension, Logic, Creativity** Learnng about Strings : Introduction, Methods of representation, Use.
19	Strings - II	**Comprehension, Logic, Creativity** Learnng about Strings : Introduction, Methods of representation, Use.
20	**Project Work - I**	**Assessment Via Application Of Learning**
21	**Project Work - II**	**Assessment Via Application Of Learning**

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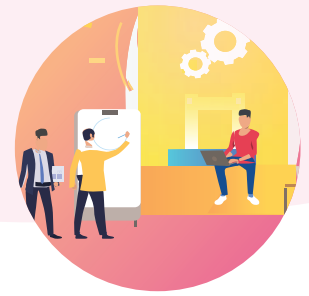
22	More About Dictionaries	**Data Manipulation, Logic** Features of Dictionary.
23	Practice Session	**Problem Solving, Creativity, Logic** Working on more projects.
24	**Code Detective**	**Assessment Of Learning**
25	Tuple-I	**Data Representation, Data Manipulation** Definition of Tuple, Comparison to List, Mutablility and Immutability.
26	Tuple-II	**Data Representation, Data Manipulation** Definition of Tuple, Comparison to List, Mutablility and Immutability.
27	Set	**Data Representation, Data Manipulation** Definition of Set, Features of Set, Mutablility and Immutability.
28	Debugging Your Programs	**Problem Solving, Logic, Step-Wise Thinking** Identifying and Fixing the errors.
29	Tkinter Module-I	**Creativity, Logic** Designing GUI for the application using Tkinter methods.
30	Tkinter Module-II	**Creativity, Logic** Designing GUI for the application using Tkinter methods.

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