

WEEK 1- PYTHON

HOUR	DATE	TOPIC CATEGORY	SESSION CONTENT
1.		WHY PYTHON	<ul style="list-style-type: none">• Language Popularity• Job Trends• Areas where Python is used.• Companies using Python and Examples.• History of Python• Compiled and Interpreted Languages.• Why Python as hybrid language.
2.		INSTALLATION OF PYTHON	<ul style="list-style-type: none">• Versions (2.7+ vs 3.0+)• Available IDEs, Comparison• Installation of Python and pyCharm.• IDLE and the interactive shell.• Basic operations on the shell.• Running the script file.
3.		*PYTHON CONVENTIONS	<ul style="list-style-type: none">• How to use Python• Object, Type, None object.• __doc__, comments• Class and function objects• __builtins__ module• Object Assignment• PRINT, INPUT
4.		PYTHON OPERATORS	<ul style="list-style-type: none">• Arithmetic Operators• Relational Operators• Logical Operators• + (Plus), * (Multiplication)• In
5.		CONSTRUCTS	<ul style="list-style-type: none">• Decision constructs. (if, elif, else)• Repetition constructs. (while, break, continue, pass)
6.			<ul style="list-style-type: none">• Iteration construct. (for item in collection)
7.		EXCEPTION HANDLING	<ul style="list-style-type: none">• Try-finally, except• Raising an Exception
8.			<ul style="list-style-type: none">• Assertions• Standard Exceptions
REVIEW – WEEK 1		STUDENT ATTENDANCE, ASSIGNMENTS , ASSESSMENT , COURSE FEEDBACK	

WEEK 2- PYTHON

9.		DATA TYPES - NUMBERS	<ul style="list-style-type: none"> • type() • help() • Int • Float • Complex • <code>__builtins__</code> functions for numbers • Printing number data
10.		*DATA TYPES - NUMBERS	<ul style="list-style-type: none"> • Math module • Fractions module • Random module
11.		DATA TYPES - BOOLEAN	<ul style="list-style-type: none"> • Bool type • True, False • Explanation of bool as an int.
12.		*DATA TYPES - BOOLEAN	<ul style="list-style-type: none"> • Using Boolians with: <ul style="list-style-type: none"> ○ Condition ○ repetition ○ iteration
13.		DATA TYPES - STRING	<ul style="list-style-type: none"> • Different type of quotes • Unicode • Understanding the str type • Implementing the str type • Index, slice • Str methods • Format method. • Iterate on strings
14.		DATA TYPES - BYTES	<ul style="list-style-type: none"> • Understanding the bytes type • Implementing the bytes type • Encode, decode methods
15.		DATA TYPES - LIST	<ul style="list-style-type: none"> • Understanding the list type • Implementing the list type • List methods • Modifying lists • String split, join • Iterate on lists
16.		DATA TYPES - TUPLE	<ul style="list-style-type: none"> • Understanding the tuple type • Implementing the tuple type • Tuple methods • Unpacking <ul style="list-style-type: none"> ○ Multiple assignment ○ Pattern matching ○ * operator
REVIEW – WEEK 2		STUDENT ATTENDANCE, ASSIGNMENTS , ASSESSMENT , COURSE FEEDBACK	

WEEK 3- PYTHON

17.		DATA TYPES - DICTIONARY	<ul style="list-style-type: none"> • Understanding the dict type • Key Value Pairs • Implementing the dict type • Creating dict from other objects • Dictionary methods • setdefault method • update method • iteration on a dictionary
18.		DATA TYPES – DICTIONARY	<ul style="list-style-type: none"> • *Dictionary keys • *Dictionary values • *Dictionary items
19.		DATA TYPES - RANGE	<ul style="list-style-type: none"> • Sequence generation • Using step • *Generating designs by nested loops
20.		DATA TYPES - RANGE	<ul style="list-style-type: none"> • *Using range() in iteration of collections
21.		FUNCTIONS	<ul style="list-style-type: none"> • Definition of a Function • Calling a Function • Functions Arguments (Required, Keyword, Default, Variable Length) • Args and kwargs. • Pass by Reference vs Value • Return statement
22.		FUNCTIONS	<ul style="list-style-type: none"> • Scope of Variables (Global vs Local)
23.		MODULES	<ul style="list-style-type: none"> • Dir() function • *Import statement • *From-Import statement • *Import * statement • Globals() and locals() • *__all__ • *Implementing modules for testing functions <ul style="list-style-type: none"> ○ __name__ ○ '__main__'
24.		PACKAGE	<ul style="list-style-type: none"> • *__init__.py • *__all__ • Search Path • *Various forms of importing using the dot operator
REVIEW – WEEK 3		STUDENT ATTENDANCE, ASSIGNMENTS , ASSESSMENT , COURSE FEEDBACK	

WEEK 4- PYTHON

25.		FUNCTIONAL PROGRAMMING	<ul style="list-style-type: none">• List Comprehension (Basic)• List Comprehension (with condition)• List Comprehension (nested)• Dictionary Comprehension
26.			<ul style="list-style-type: none">• Anonymous Functions with lambda• Working with inline functions
27.		REGULAR EXPRESSIONS	<ul style="list-style-type: none">• What are Regular Expressions• Matching Characters, Searching• Compiling Regular Expressions• Split• Findall• Search
28.		REGULAR EXPRESSIONS	<ul style="list-style-type: none">• Ignore case vs normal search• Repetition• Emails Example• Group Extraction
29.		OOPS	<ul style="list-style-type: none">• Classes and objects• Class vs Instance Variables vs Static Variables• Inheritance• Multiple Inheritance• __init__ ()• __str__ ()
30.		*CREATING CLASS TYPES	<ul style="list-style-type: none">• Inheritance• Encapsulation• Redefination
31.		FILE I/O	<ul style="list-style-type: none">• Opening and Closing Files.• Reading and Writing Files.• *Modifying file content• *Context manager – With construct.• *File exceptions
32.		*WORKING WITH THE OPERATING SYSTEM.	<ul style="list-style-type: none">• Os module• Os.path module• Shutil module• Splitting the path using recursion• Locating files• Directory walk
REVIEW – WEEK 4		STUDENT ATTENDANCE, ASSIGNMENTS , ASSESSMENT , COURSE FEEDBACK	

WEEK 5 – DJANGO

33.		Introduction to Virtual Environment	<ul style="list-style-type: none"> • Installation • Creating a new virtual environment • Activating the environment
34.		About Django	<ul style="list-style-type: none"> • Django Overview, version and Installation • Understanding and using the PIP command
35.		Creating first Web Application	<ul style="list-style-type: none"> • Creating Web Project using Django-admin • Understanding Folder structure (settings.py, urls.py) • Running the Django Development Server using manage.py • List of commands available with manage.py • Verifying the Django installation and setup.
36.		Introduction to Admin Site	<ul style="list-style-type: none"> • Understanding and running “migration” • Activating the admin site • Creating Super user • Login and how to use admin panel (Create users)
37.		Django Model & Database Concepts	<ul style="list-style-type: none"> • What are apps and its purpose • App project structure • Database Design Considerations • Fields, Fields Types and Field Options • Handling Relationships, DjangoORM
38.		Creating first Application (Foodblog) - Model	<ul style="list-style-type: none"> • Understanding models.py • Creating Data Models • Makemigrations, Migrate • Understanding admin.py • Registration of Models in admin site • Administrate the Custom Model (Create / Update)
39.		View, Template	<ul style="list-style-type: none"> • *Understanding views.py (List, Detail, Pagination) • *Routing – making the urls • Templates & Variables • Template Inheritance (Base, List, Detail, Pagination) • HTML Escaping • Creating a template library
40.		Forms	<ul style="list-style-type: none"> • Forms: General & Model. • GET and POST methods using Forms • Validation & Rendering forms • *Add features: (Email Sharing & Comments)
REVIEW – WEEK 5		STUDENT ATTENDANCE, ASSIGNMENTS , ASSESSMENT , COURSE FEEDBACK	

WEEK 6 – DJANGO

41.		*Queryset options.	<ul style="list-style-type: none"> • Work from the Python shell • Read all data via Python from the Django project • Create data • Save data • Delete data
42.			<ul style="list-style-type: none"> • Query data • Filter data • Send e-mail
43.		Understanding Error Pages	<ul style="list-style-type: none"> • Raising 404 • Writing a 404 (page not found) view • Writing a 500 (Server error) view
44.		*Modifying the Model *Customizing the Admin	<ul style="list-style-type: none"> • Modify the Model to add image property • Migrate • Use admin to upload the image • Static files settings • Static file url • Render the image in template • Modify the Django admin to display custom Title
45.		REST API Introduction	<ul style="list-style-type: none"> • Understanding REST basics. • CRUD Methods • REST API Models • REST API Serializer JSON • REST API view Request and Response.
46.		Client Side Basics	<ul style="list-style-type: none"> • Introduction to Bootstrap tutorial • Creating sample client side pages using Bootstrap • Bootstrap classes and examples.
47.		LIVE PROJECT	<ul style="list-style-type: none"> • DEFINATION OF REQUIREMENT • DESIGN • DOCUMENTATION
48.			<ul style="list-style-type: none"> • DEVELOPMENT • TESTING • INTERGRATION
REVIEW – WEEK 6		STUDENT ATTENDANCE, ASSIGNMENTS , ASSESSMENT , COURSE FEEDBACK	

WEEK 7

49.		INTRODUCTION TO GIT	<ul style="list-style-type: none"> • Introduction to Git and Github • Installation • Creating a project • Adding Git to an existing Project • Git Workflow (add, commit, pull & push) • Git ignore file
50.		INTRODUCTION TO HTML	<ul style="list-style-type: none"> • Introduction • Basic HTML markup • Writing a simple html file
		INTRODUCTION TO CSS	<ul style="list-style-type: none"> • Basic CSS Style Definitions • Writing a simple css file • Incorporating css into html
51.		INTRODUCTION TO JAVASCRIPT - 1	<ul style="list-style-type: none"> • Conventions • Data types • Operators • Constructs • Math, Date
52.		INTRODUCTION TO JAVASCRIPT - 2	<ul style="list-style-type: none"> • Array Object • Map Object • Named Function • Anonymous Functions
REVIEW – WEEK 7		STUDENT ATTENDANCE, ASSIGNMENTS , ASSESSMENT , COURSE FEEDBACK	