

Course Curriculum

Programming Languages and PYTHON

	What is Programming Language	1
	Difference between scripting and programming language	1
	Characteristics and features of Python	1
1	Installing Anaconda	1
1.	Installing Anaconda	
	Explanation of Anaconda framework	
	Working with SPYDER IDE	
	Working with JUPYTER NOTEBOOK	1
2.	PYTHON – BASIC SYNTAX	3
	First Python Program	2
	Python Identifiers	2
	Python Keywords	2
	Lines and Indentation	2
	Quotation in Python	3
	Comments in Python	3
	Using Blank Lines	3
	Waiting for the User	3
3.	PYTHON — VARIABLE TYPES And Statement	5
	Assigning Values to Variables	4
	Multiple Assignment	4
	Standard Data Types	4
	Python Numbers	4
	Python Strings	4
	Simple Assignment Statement	5
	Augmented Assignment Statement	5
	Multi-line Statement in Python	5
	Python Lists	
	Python Tuples	
	Python Dictionary	5

	Data Type Conversion5
4.	PYTHON – BASIC OPERATORS7
	Types of Operators6
	Python Arithmetic Operators6
	Python Comparison Operators6
	Python Assignment Operators6
	Python Bitwise Operators6
	Python Logical Operators7
	Python Membership Operators7
	Python Identity Operators7
	Python Operators Precedence7
5.	PYTHON – DECISION MAKING
	If Statement8
	Hands-On Practice8
	Ifelse Statement9
	Hands-On Practice9
	The <i>elif</i> Statement9
	Hands-On Practice9
	Single Statement Suites
	Hands-On Practice10
6.	PYTHON – LOOPS
	While Loop
	The Infinite Loop
	Using else Statement with Loops
	Single Statement Suites
	Hands-On Practice
	For Loop
	Iterating by Sequence Index
	Using else Statement with Loops
	Hands-On Practice13
	Nested Loops
	Loop Control Statements

	E	Break Statement	13
	C	Continue Statement	13
	P	Pass Statement	13
	ŀ	lands-On Practice	14
7.	PYT	HON – NUMBERS	15
	N	Number Type Conversion	15
	F	Random Number Functions	15
	T	rigonometric Functions	15
	N	Mathematical Constants	15
	H	lands-On Practice	15
8.	PYT	HON – STRINGS	18
	P	Accessing Values in Strings	16
	ι	Jpdating Strings	16
	E	scape Characters	16
	S	string Special Operators	16
	S	string Formatting Operator	16
	T	riple Quotes	16
	H	lands-On Practice	17
	Е	Built-in String Methods	17
	c	apitalize() Method	17
	U	ıpper()	17
	le	ower()	17
	c	enter(width, fillchar) Method	17
	c	ount(str, beg= 0,end=len(string)) Method	17
	s	tartswith(str, beg=0,end=len(string))	17
	e	endswith(suffix, beg=0, end=len(string)) Method	17
	f	ind(str, beg=0 end=len(string))	17
	i	ndex(str, beg=0, end=len(string))	17
	H	lands-On Practice	18
	is	salnum() Method	18
	is	sdecimal()	18
	is	salpha()	18
	is	sdigit()	18

	islower()	18
	isnumeric()	18
	isspace() Method	18
	istitle()	18
	isupper()	18
	join(seq)	18
	len(string)	18
	lstrip()	18
	max(str)	18
	min(str)	18
	replace(old, new [, max])	18
	strip([chars])	18
	Hands-On Practice	18
9.	PYTHON – LISTS	21
	Python Lists	19
	Accessing Values in Lists	19
	Updating Lists	19
	Deleting List Elements	19
	Basic List Operations	19
	Indexing, Slicing	19
	Built-in List Functions and Methods	19
	Hands-On Practice	20
	Cmp(list1, list2)	20
	len(List)	20
	max(list)	20
	min(list)	20
	List.append(obj)	20
	list.count(obj)	20
	list.extend(seq)	20
	list.index(obj)	20
	list.insert(index,obj)	20
	list.pop(obj=list[-1])	20
	List.remove(obj)	20

	List.reverse()	20
	list.sort([func])	20
	Hands-On Practice	21
10.	PYTHON – Tuples	24
	Accessing Values in Tuples	22
	Updating Tuples	22
	Deleting Tuple Elements	22
	Hands-On Practice	22
	Basic Tuples Operations	22
	Indexing, Slicing, and Matrixes	23
	No Enclosing Delimiters	23
	Built-in Tuple Functions	23
	Cmp(tuple1, tuple2)	23
	Len(tuple)	23
	Max(tuple)	23
	Min(tuple)	23
	Tuple(seg)	23
	Hands-On Practice	24
11.	PYTHON – DICTIONARY	27
	Accessing Values in Dictionary	25
	Updating Dictionary	25
	Delete Dictionary Elements	25
	Properties of Dictionary Keys	25
	Hands-On Practice	25
	Built-in Dictionary Functions and Methods	25
	Cmp(dict1, dict2)	26
	len(dict)	26
	str(dict)	26
	type()	26
	dict.clear()	26
	Dict.copy()	26

	Dict.fromkeys()	26
	Dict.get(key,default=none)	26
	Dict.has_key(key)	26
	Dict.items()	26
	Dict.keys()	26
	dict.setdefault(key, default=None)	26
	dict.update(dict2)	26
	dict.values()	26
	Hands-On Practice	27
12.	2. PYTHON – FUNCTIONS	29
	Defining a Function	28
	Calling a Function	28
	Passing by Reference Versus Passing by Value	28
	Function Arguments	28
	Required Arguments	28
	Keyword Arguments	28
	Default Arguments	28
	Variable Length Arguments	28
	Hands-On Practice	29
	The Anonymous Functions	29
	The return Statement	29
	Scope of Variables	29
	Global vs. Local variables	29
	Hands-On Practice	29
13.	3. PYTHON – MODULES + ERRORS	30
	The import Statement	30
	The fromimport Statement	30
	The fromimport * Statement:	x30
	Locating Modules:	30
	Packages in Python	30
	Working with Python errors	30
	Hands-On Practice	30

14.	Fun with PythonBN	V-1
	Project Explanation	