Python Programming Basics
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	Python Data structures: 1. Strings " " 2. List [ ] 3. Tuple ( ) 4. Dictionary { }	functions create, print, append, delete,modify, sort, copy , packing and unpacking, join , use with if and loops	
	Python Program	Output	notes
	python as calculator		
1	#Write a program to print your name print(" bharat ")	bharat	No need of semicolon(;) at the end like C, C++
2	#program to print ” welcome to python” print("welcome to python")	welcome to python	
3	#python as calculator >>> 5 * 2	10	Multiplication
4	#python as calculator >>> 5 ** 2	25	5*5 =25 ** is power
5	#python as calculator >>> 5 + 2	7	addition
6	#python as calculator >>> 5 - 2	3	subtraction
7	#python as calculator >>> 5 / 2	2.5	Float division

8	#python as calculator >>> 5 // 2	2	No float values with //

9	# calculate Area of rectangle
	width = 10
	height = 20
	area = width * height
	print(area)
		200	np need to declare int, float
			python detects automatically when we give value to variable

	# String string : a group of characters		

10	# print greetings using strings
	greet = "Hi Bharat, how are you? "
	print(greet)
		Hi Bharat, how are you?	keep strings in single quotes ('...') or double quotes("....")

11	# print new line
	str =" write \n run it "
	>>>str
		write \n run it	single line only

12	# print new line
	str =" write \n run it "
	>>>print(str)
		write
		run it
			two lines with the use of print() function

13	# print new line
	str ="my \name is bharat "
	>>>print(str)
		my
		ame is bharat
			where is 'n'
			\n means newline

14	#multi line strings
	str = """ hai bharat,
	Are you teaching python?
	it's very interesting subject"""
	>>>str
		hai bharat, \nAre you teaching python?\nit's very interesting subject	added \n

15	#multi line strings
	str = """ hai bharat,
	Are you teaching python?
	it's very interesting subject"""
	>>>print(str)
		hai bharat,
		Are you teaching python?
		it's very interesting subject
			printed in multiple lines

16	#multi line strings
	str = """
	Name : bharat
	subject: python
	email :
	bharatagape@gmail.com
		Name : bharat
		subject: python
		email : bharatagape@gmail.com
		website: profbharat.in
			printing as it is

	website: profbharat.in """ print(str)		
17	#print 3 times your name >>>3 * 'bharat'	bharatbharatbharat	keep strings in quotes

18	#print 3 times your name
	name = 'bharat'
	print(3 * name)
		same as above	

19	#add your firstname and last name
	firstname = "bharat"
	lastname = "kumar"
	
	print(firstname + lastname)
		bharatkumar	no space here

20	#add your firstname and last name
	name = 'bharat' + 'kumar'
	print(name)
		bharatkumar	

21	#check output
	name = 'bharat' + 3* "kumar"
	print(name)
		bharatkumarkumarkumar	

22	#string index []
	name = 'kumar'
	>>>name[0]
		k	

22a	>>>name[1]	u	
22b	>>>name[0:3]	kum	excluding index 3
22c	>>>name[2:4]	ma	start included ,end excluded
22d	>>>name[2:]	mar	till end
23	#strings are immutable, >>>name[0] = 'B'	TypeError: 'str' object does not support item assignment	we can't change
	LIST uses square brackets [ ],mutable		
24	#create a list of marks and print >>>marks = [90,91,94,95,96] >>>marks	[90, 91, 94, 95, 96] #elements are separated with comma','	
25	#add more elements to list >>>marks + [100,60]	[90, 91, 94, 95, 96, 100,60]	100 added
26	>>>del marks[0]	[91, 94, 95, 96, 100,60]	deleted 90
27	#find no of elements in list	6	len()

	>>>len(marks)		
28	#show that lists are mutable >>>marks[0] = 40	[40, 94, 95, 96, 100,60]	replaced 91 with 40

29	#show nested lists
	a = [90,95,98]
	b = ["bharat", "kumar", "kumari"]
	c =[a,b]
	>>>c
		[[90, 95, 98],
		['bharat', 'kumar', 'kumari']]	

30	Tuple uses parenthesis ( ),immutable		
	#create a list of marks and print >>>marks = (90,91,94,95,96) >>>marks	(90, 91, 94, 95, 96) #elements are separated with comma','	
	>>marks[0]= 100	TypeError: 'tuple' object does not support item assignment	error
	>>>del marks[0]	TypeError: 'tuple' object doesn't support item deletion	error
	>>>del marks	deleted	possible

	tuple1 = ('bharat','kumar', 'bk')
	if 'bharat' in tuple1:
	print("yes,bharat is there ")
	else:
	print("No, bharat is not there")
		yes,bharat is there	

	# convert tuple to list to add elements list1 = list(tuple1) list1.append("naveen") tuple1 =tuple(list1) print(tuple1)	('bharat', 'kumar', 'bk', 'naveen')	

	# Unpacking Tuple
	tuple2 = (60,70,80)
	bharat,kumar,naveen = tuple2
	print(bharat,kumar,naveen)
		60,70,80	

DICTIONARY

uses {key:value } syntax, keys should be unique

	`dict1 = { 1 : "bharat", 2: "kumar", 3: "kk"}`
	`for i in dict1:`
	`  print("\t",dict1[i])`
		bharat
		kumar
		kk	

	`#marks is a dictionary`
	`marks = {'bharat' : 50,`
	`'kumar' :60,`
	`'naveen' :70}`
	`print(marks)`
		`{'bharat': 50, 'kumar': 60,`
		`'naveen': 70}`	

	`marks['suresh'] = 80` `print(marks)`	`{'bharat': 50, 'kumar': 60, 'naveen': 70, 'suresh': 80}`	suresh added

SET

uses { }, duplicates are ignored

	`set1 = {10,20,10,20,30}` `print(set1)`	{10,20,30}	duplicates not printed

	`set1 = {10,20,10,20,30}`
	`set2 = {20,30,10,50,40}`
	`set3 = set1.union(set2)`
	`print(set3)`
		{40, 10, 50, 20, 30}	

	`set4 = set1.intersection(set2)`	{10, 20, 30}	
	`set4.add(90)`	{10, 20, 30, 90}	
	`set4.remove(90)`	{10, 20, 30}	

IF ELSE

	`a = 10` `b = 100`	b is bigger	

	`if a > b:`
	`  print("a is bigger")`
	`else:`
	`  print("b is bigger")`		

	`a = 10`
	`b = 100`
	
	`print("hai")if a> b else print("bye")`
		bye	

	`goodboy = True`
	
	`if goodboy:`
	`  print('Bharat is goodboy')`
	`else:`
	`  print('Bharat is not goodboy')`
		Bharat is goodboy	

	`# taking input from user, user will type the age`
	`age = int(input("Enter age:"))`
	`if age >= 18 :`
	`  print("Eligible to Vote")`
	`else :`
	`  print("Not eligible to vote")`		

	LOOPs		

	`#print 5 natural number using loop`
	`i = 1`
	`while i <=5:`
	`  print(i)`
	`  i += 1`
		1 2 3 4 5	

	`N= 5`
	`for i in range(1,N+1):`
	`  print(i)`
		1 2 3 4 5	