

Pythen Essentials

Assignment I

EN19 CS 301110

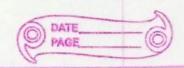
1 Introduce Python.

Ans Python is a widely used general-purpose, high level programming language. It was calcated by Childo won Rassum in 1991 & further developed by the Python Software foundation. It was designed with an emphasis on code speadability, & its syntax allows programmes to express theirs concepts in fower lines of code.

Their are two major Python versions: Python 2 1) Python 3. Both are quite different features of python are-

- python are -
- · Works on of platforms (Win / Mac / Zinux / Raspberry Pi)
- · Syntan is similar to English Ranguage.
- · Python runs on an interpreter system, meaning that code can be enecuted as soon as it is written.
- · Python can be treated in a procedural way,

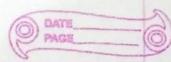




on object-oriented way or a functional way.

	terrorials from Salarus and Audientical Salarus and Au			
2	Explain e	soric data type	with example?	
	Data Types	Camples	Explanation	Is mutable
	Strings	"Hello" 12.1"	Text - anything 6/W "	Immutable
	0		becomes string	
	Integers	5364	whole numbers	Immutable
	Floats	3.1415	Decimal Numbero	Immutable
	Booleans	True, fase	Touth values that	Immuteble
	(Control of the Control of the Contr		represent Yes/No	
	Zists	[1,2,3,4]	A collection of data.	mutable
	1450	tarme	sits between []	
	Tuples	(1,2,3,4)	A collection of data,	Immutable
	in the last Ann		sits between ()	
	Di ctionacies	24":1,"b:27	A collection of data	mutable
			sits between 19	
	· Friday and Applications			
3	Application of Python?			
Ans	- Pharman - Company			
Salvano e A	Neb & Internet Dévelopment			
a)	Frameworks such as plante & Bottle.			
6)	micro-trameworks such as flask & Bottle.			
	The second secon			





· Scientific & Numeric a) Scipy is a collection of package for mathematics science, l'engineering. b) Pondan is a data analytis of modelling library. · Deiktop Guis The library in included with most binary distro. of python. b) Platform-specific toolkits are also available like CITIC+, etc. · Software Development a) scons for build control. b) Roundup or Torac for buy tracking p project management. · Business. Applications a) Python is also used to build ERP & e-commerce b) Tryton is a three-tier high-level general purpose application platform.

4. Implement 5 programs on operator.

Arithmetic Operators

```
# Examples of Arithmetic Operator
a = 9
b = 4
# Addition of numbers
add = a + b
# Subtraction of numbers
sub = a - b
# Multiplication of number
mul = a * b
# Division(float) of number
div1 = a/b
# Division(floor) of number
div2 = a // b
# Modulo of both number
mod = a \% b
# Power
p = a ** b
# print results
print(div2)
```

Comparison Operators

```
# Examples of Relational Operators
a = 13
```

```
b = 33
# a > b is False
print(a > b)
# a < b is True
print(a < b)
# a == b is False
print(a == b)
# a != b is True
print(a != b)
# a >= b is False
print(a != b)
# a >= b is False
print(a >= b)
# a <= b is True
print(a <= b)</pre>
```

Logical Operators

```
# Examples of Logical Operator
a = True
b = False

# Print a and b is False
print(a and b)

# Print a or b is True
print(a or b)

# Print not a is False
print(not a)
```

Bitwise Operators

```
# Examples of Bitwise operators
a = 10
b = 4
# Print bitwise AND operation
```

```
print(a & b)

# Print bitwise OR operation
print(a | b)

# Print bitwise NOT operation
print(~a)

# print bitwise XOR operation
print(a ^ b)

# print bitwise right shift operation
print(a >> 2)

# print bitwise left shift operation
print(a << 2)</pre>
```

Assignment Operators

```
# Examples of Assignment Operators
a = 10

# Assign value
b = a
print(b)

# Add and assign value
b += a
print(b)

# Subtract and assign value
b -= a
print(b)

# multiply and assign
b *= a
print(b)

# bitwise lishift operator
b <<= a
print(b)</pre>
```

Identity Operators

```
a = 10
b = 20
c = a
print(a is not b)
print(a is c)
```

Membership Operators

```
# Python program to illustrate
# not 'in' operator
x = 24
y = 20
list = [10, 20, 30, 40, 50]

if (x not in list):
print("x is NOT present in given list")
else:
print("x is present in given list")

if (y in list):
print("y is present in given list")
else:
print("y is NOT present in given list")
```

Examples of Operator Precedence

Precedence and Associativity of Operators

```
# Precedence of '+' & '*'
expr = 10 + 20 * 30
print(expr)

# Precedence of 'or' & 'and'
name = "Alex"
age = 0

if name == "Alex" or name == "John" and age >= 2:
print("Hello! Welcome.")
else:
```

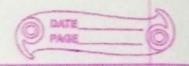
Operator Associativity

Examples of Operator Associativity # Left-right associativity # 100 / 10 * 10 is calculated as # (100 / 10) * 10 and not # as 100 / (10 * 10) print(100 / 10 * 10) # Left-right associativity #5-2+3 is calculated as # (5 - 2) + 3 and not # as 5 - (2 + 3)print(5 - 2 + 3)# left-right associativity print(5 - (2 + 3))# right-left associativity # 2 ** 3 ** 2 is calculated as # 2 ** (3 ** 2) and not # as (2 ** 3) ** 2

print(2 ** 3 ** 2)

5	Explain variable, print(), input(), range().			
Aro •	Variable - A variable is created the moment			
	you first arsign a value to st.			
	for example			
	Carl time			
	z = 5			
	y = " John"			
•	point () - Prints to the Standard output device.			
	for example			
	print ("Hello world")			
•	input () - Allowing wer input			
	V			
	for example			
	d=input()			





from 0 1 increment by 1 (by default)

for example

 $\alpha = range(6)$ for n in α :

print (m)