Assignment-2

S. Harshitha
321810301034
A section.

1. What are the datatypes in python? Explain.

A Data types are the classification (or) categorization of data items.

Numeric, non-numeric and boolean data are the most used datatypes.

Numeric :-

a Numeric value is any represntation of data which has a numeric value.

Integer :-

positive (or) negative whole number.

float :-

any Real number with a floating point representation in which a fraction component is denoted by a decimal symbol (or) scientific notation.

Complex :-

a numbers with a real number and imaginary component represented as x+yj, x and y are floats and i is -1

Boolean :-

data with one of two built in value true (or) flase.

Sequence type :-

a Sequence is an ordered collection of similar (or) different data types.

String :-

a string value is a collection of one (or) more characters put in single, double (or) triple quotes

List :-

a list object is an ordered collection of one (or) more data items, not neccessarily of the

the same type put in brackets.

a tuple object is an ordered collection of one (or) more data item not neccessarly of the same type put in parenthesis.

Phython was conceived in the late 1980s by guido van Rossum at centrum wiskunde & information (CWI) in the netherland. as a sucessor to the ABC language capble of exception handling and interfacting with the amobea opearting system its implementation began in december 1989.

Language designers :- Guido van Rossum

Language paradigms : interpreted language. dynamic c- programming languages. function language.

Software -> cpython. psycho, Nuitka. Sage math. ubuntu.

in february 1991 van Rossum published the code to alt. sources. already present at this stage in development were classes with inheritance. exception handling. function are the core data types of lists. dict. sty and so on. python 2.0 was released on october 16, 2000, with many major new features, including a cycle. detecting garbage collection.

python 3.0 a major back word. incomplete release was relead on december 3, 2008 after a long period of testing.

3. Explain all the operators in python.

Arithmetic operators:

Arithmetic operators are used to perform mathematication operations like addition, multiplication, substraction etc.

operator	meaning	Example.
+	add two operand (or-) unary ~~opa~~-plus	x+y+2
-	subtract right operat from the left (or) urany minus	x-y-2
*	Multiply two operands.	x*y
/	divide left operand by the right one	x/y
%	Modulus- remainder of the discsion of left operand by right	x%y
//	floor division division on that result into whole numble.	x//y.
**	Exponent left operand raised to the power of right	x**y

Comparision operators →

Comparision operators are used to compare value it returns either - true (or) false. according to the condition.

operator	Meaning	Example
>	Greate than true if left operand is greater than right	x >y
<	less than - true if left operand is less than right	x <y
==	Equal to true if batch operands. are equal.	x==y
!=	Not equal to. true if operation are not equal	x!=4.
>=	Greater than (or) equal to - true if left operan is greater than or equal to right	x >= 4.
<=	less than or equal to true if left operand is less than or equal to the right	x <=y

Scanned with CamScanner

logical operators:-

logical operators are the and, or, operator

operators	meaning
and	true if both operands are true.
not	true if operands is false.
or	true if operands is false.

bitwise operators:-

bitwise operator action operators as if they were string binary digits they operate bit by bit hence the name. for example, 2 is $\boxed{10}$ in binary and 7 is 111

following table shows some of bit wise operators.

operators	Meaning	Example
&	bitwise AND	$x \& y = 0$ $\boxed{00000000}$
|	bitwise OR	$x \| y = 14$ $\boxed{00001110}$
~	bitwise NOT	$x = -11$ $\boxed{1111\ 0101}$
>>	bitwise right shift	$x >> 2 = 2$ $\boxed{000\ 000}$
<<	bitwise left shift	$x << 2 = 40$ $\boxed{0000\ 1000}$

Assignment operation

Operator	Example	equivalente to
=	x = 5	x = 5
+ =	x + = 5	x = x + 5
- =	x = - 5	x = x - 5
* =	x * = 5	x = x * 5.
/ =	x / = 5	x = x / 5
% =	x % = 5	x = x % 5
>> =	x >> = 5	x = x >> 5
// =	x // = 5	x = x // 5
** =	x ** = 5	x = x ** 5

Special operator :-

python language offers some special types of operation line the identity oper-ator are the member operation.

Identity operator :-

operator	Meaning	example.
is	true if the opera-tor are identical	x is true.
is not	true if the operand are not identical	x is not true.

Member ship operators

in and contin are the member ship operators in python

operator	Meaning	example.
in	true if value it found in seque-nce.	5 in x.

not in	true if value is not found in sequence.	5 not in x

4. Explain the features of python?

(i) Easy to learn and use- python is easy to learn and use it is developer- friendly and high level programming language

(ii) Interpreted language :- python languge. is move expression means that is more. understandable and readable.

(iii) Expressive language :- python is interpereted language.

i.e interputer- executes the code line by line at time.

(iv) Cross- platform language -> python can. run equally different platform such as windows, linux etc.

(v) free and open source -> python supports object oriented language and concepts of classes and object come into existence.

(vi) object. oriented language -> python support object oriented language and concepts of classes and objects come into existence.

(vii) extensible -> it implies that other languages such as c(c++) can be used to comple the code come int compile code

(viii) Large standard library - python has a large and broad library and provides rich set of module

5. Justify why python is interactive interputed langugе?

unlike c/c++ python is an interpreted obj-ect - oriented progromming language because it checks each line of code line by line and turns into michence readable bytecode.