ASSIGNMENT 1

Q1. Why do we call Python as a general purpose and high-level programming language?

Ans: Python is known as a general purpose language because it is used for a wide variety of programs and not only for a particular kind of program.

eg: web development, scientific and numerical computing, data science, machine learning, etc.

Python is also called as a High level language because:

- It is simple and easy for humans to understand.
- It can run on any platform.
- Python is simple to debug.
- Free and open source.
- Extensive library support.

Q2. Why is Python called a dynamically typed language?

Ans: Python is called as a dynamically typed language because in python there is no need to define the types of variables. A user can directly declare variables without declaring its data types. The data type will be examined by the interpreter while executing the program.

eg: x=5 will be interpreted as an integer data type.

Q3. List some pros and cons of Python programming language?

Ans: Pros of python programming:

- Python is easy to learn and read.

- Python enhances productivity.
- Python has vast number of libraries which simplifies many complicated processes.
- Python is a free and an open source.
- Python is a portable programming language. It can work on any platform.
- Python is a high level general purpose language which makes it easy to use.

Cons of python programming:

- Python has speed limitations because it is dynamically typed and interpreted programming language.
- Python can have runtime errors because of its dynamically typed features.
- Python consumes a lot of memory space.
- Python is not native to mobile environment.

Q4. In what all domains can we use Python?

Ans: Python is a general purpose high level language, therefore it can be used in number of domains, some of which are as follows:

- Machine learning and AI.
- Data Science.
- Automation.
- Application Development.
- Desktop GUI.

- OS Development.
- Gaming.
- Scientific Programming.
- Embedded systems.

Q5. What are variable and how can we declare them?

Ans: Variables are containers that store values, or we can say it is name given to a memory location. It is basic unit of storage in a program.

In python variable is declared in following steps:

- name a variable.
- assign a value to it.
- data type of a variable will be automatically determined. There is no need to specify it explicitly.

eg: x=5, n="Hello World".

Q6. How can we take an input from the user in Python?

Ans: In python input from user can be taken from a user by using the "input( )" function. It takes input from a user and then evaluates the expression. The python interpreter automatically identifies whether a user input is a string, number, or a list.

eg: name=input("enter your name")

print(name)

Q7. What is the default datatype of the value that has been taken as an input using input() function?

Ans: By default the input() function read the user's input as a string.

Q8. What is type casting?

Ans: Typecasting is the method to convert the variable data type into a certain data type to match the operations required to be performed by a user.

eg: if we assign int() function to a float value, it'll typecasted into an integer value.

Q9. Can we take more than one input from the user using single input() function? If yes, how? If no, why?

Ans: Yes, we can take more than one input from the user using single input() function by two methods:

- Using split() method:

This function helps in getting multiple inputs from users. It breaks the given input by the specified separator. If a separator is not provided then any white space is a separator. Generally, users use a split() method to split a Python string but one can use it in taking multiple inputs.

eg: x, y = input("Enter two values: ").split()

print("enter value 1: ", x)

print("enter value 2: ", y)

- Using List comprehension:

A user can create lists just like mathematical statements in one line only. It is also used in getting multiple inputs from a user.

eg: x, y = [int(x) for x in input("Enter two values: ").split()]

print("First Number is: ", x)

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print("Second Number is: ", y)
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Q10. What are keywords?

Ans: Keywords are predefined, reserved words used in Python programming that have special meanings to the compiler. We cannot use a keyword as a variable name, function name, or any other identifier. They are used to define the syntax and structure of the Python language. All the keywords except True, False and None are in lowercase and they must be written as they are.

Some examples of keywords are:

if, else, elif, break, continue, etc.

Q11. Can we use keywords as a variable? Support your answer with reason.

Ans: No, we can not use keywords as a variable because keywords are predefined, reserved words used in python programming that have a special meaning to the compiler.

And if keywords are allowed to be used as a variable it would be very hard for a compiler to identify if the keyword used in the program is a specific keyword or a variable.

Q12. What is indentation? What's the use of indentation in Python?

Ans: Indentation refers to the spaces at the beginning of a code line.

Python use indentation to indicate a block of code. It is a way of telling interpreter that the group of statements belong to a particular block of code. If a block has to be more deeply nested, it is further indented to the right.

Q13. How can we throw some output in Python?

Ans: In python output can be thrown by simply using the print() function.

The print() function can also accept different parameters like object, end, sep.

eg: print("This is to throw some output")

Q14. What are operators in Python?

Ans: Operators in python are used to perform operations on different variables and values. These are standard symbols used for purpose of some logical and arithmetic operations.

Operators are of different types such as arithmetic(+, -, *, /) and comparison operators such as >, <, ==,!=, >=, <=, etc.

Q15. What is difference between / and // operators?

Ans: / operator:

/ operator is used for float division.

eg: 5/2 = 2.5

// operator:

Is used for floor division or for integer value output. The decimal point digits are removed.

Eg: 5//2 = 2

Q18. What are boolean operator?

Ans: Boolean operators are those operators that results in the boolean values of True or False. These are used to know if the given expression in the program is True or False.

eg: x=4

y=5

x= =y will return False.

Q20. What are conditional statements in Python?

Ans: Conditional statements in Python are the statements that perform different actions depending on whether it is True or False. These statements guide the program while making decisions based on given conditions.

The different conditional statements in python are:

- if
- elif
- else.

Q21. What is use of 'if', 'elif' and 'else' keywords?

Ans: If Keyword:

The if keyword is used to create conditional statements and allows a user to execute a block of code only if the condition is True.

Elif Keyword:

This keyword is used when the first if statement is not true and we want to check the other condition or a block of code.

else Keyword:

The else keyword is used in the conditional if statements to decide what to do when if condition turns out to be False.