**Python Assignment – 1**

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

Ans-Python is an object-oriented, high-level programming language. Object-oriented means this language is based around objects (such as data) rather than functions, and high-level means it's easy for humans to understand.

**Q2. Why is Python called a dynamically typed language?**

Ans- In python, there is no need to define the types of variables. It allows to directly use the variables as its type-checking will be done during the execution of the program. The interpreter checks the program line-by-line and also examines the data type of the variable.

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

Ans:-

**The pros of Python**

* Python is easy to learn and read.
* Python enhances productivity.
* Python has a vast collection of libraries.
* Python is free, open-source, and has a vibrant community.
* Python is a portable programming language.
* Python is an interpreted language.
* The cons of python programming language.

**The cons of Python**

* Speed Limitations. We have seen that Python code is executed line by line.
* Weak in Mobile Computing and Browsers. While it serves as an excellent server-side language, Python is much rarely seen on the client-side.
* Design Restrictions.
* Underdeveloped Database Access Layers.

**Q4. In what all domains can we use Python?**

Ans- Python is now one of the most popular and widely used programming languages in the world. Besides web and software development, Python is used for **data analytics, machine learning, Game and web development, Data science ,os development,scientific programming and even design**

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

Ans- Variables are **the basic unit of storage in a programming language**. These variables consist of a data type, the variable name, and the value to be assigned to the variable.

**A variable declaration always contains two components: the type of the variable and its name**. Also, the location of the variable declaration, that is, where the declaration appears in relation to other code elements, determines the scope of the variable.

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

Ans- Python allows for user input.That means we are able to ask the user for input.

Example:-

Name = input("Enter your name: ")

print("Your Name is :", Name)

Output:-

Your Name is:\_\_\_\_\_\_\_\_\_\_\_

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

Ans- The value returned by the input() is **a string**. Any data type can be used to convert the contents of an input. For example: The user can convert the value entered into an integer variable

**Q8. What is type casting?**

Ans-Type Casting is **the method to convert the variable data type into a certain data type in order to the operation required to be performed by users**.

Example:-

# Python program to demonstrate

# type Casting

# int variable

a = 5

# typecast to float

n = float(a)

print(n)

print(type(n))

Output:-

5.0

<class ’float’>

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

**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](https://www.programiz.com/python-programming/variables-datatypes) name, [function](https://www.programiz.com/python-programming/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 . The list of all the keywords is given below.

False,await,elif, if, else,import,pass,None,break,exept,in,raise,True,class,finally,is,return,and,continue,for,lambda,try,as, def, from, nonlocal, while , ,assert, del, global, not, with, async ,or, yield.

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

Ans-Keywords are some predefined and reserved words in python that have special meanings. **The keyword cannot be used as an variable name**

**Reason**: Because Compiler will get confused (or it'll create ambiguity) whether to take it as a **keyword** or a **variable**. Compiler isn't a Human Brain, like Human Brain can differentiate Homophones (as they've same pronunciation)

**Example**: Suppose**while** keyword in python. If you use this **keyword** as **variable,**then compiler will get confused whether it is a variable or keyword.

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

Ans- Indentation refers to the spaces at the beginning of a code line. Where in other programming languages the indentation in code is for readability only, the indentation in Python is very important. Python uses indentation **to indicate a block of code**.

 It is mainly used for code inside looping statements, control structures, functions etc. as good intended code is easy to maintain and is working. It makes the code more readable and easy to understand.

Q13. How can we throw some output in Python?

Ans:-The basic way to do output is the **print statement**.

**Q14. What are operators in Python?**

Ans- Operators are used to perform operations on variables and values

Python divides the operators in the following groups:

* Arithmetic operators (Example+,-,/,\*,%,\*\*)
* Assignment operators (Example=,++,=+,\*=,%,etc)
* Comparison operators (Example =, !+, <, >, <= ,>+ )
* Logical operators (Example and, or , not)
* Identity operators (Example is ,is not)
* Boolean operators (Example True,False)
* Bitwise operators (Example &,|,^,~,<<,>>)

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

Ans:-AND and OR are defined as logical operators. Both require two operands which may evaluate to true or false. **The and operator returns True only if both operands are True.** **The or operator returns True if either operand is true**.

**Q16. Write a code that gives following as an output.**

```

iNeuroniNeuroniNeuroniNeuron

```

Ans:-i =( " iNeuroniNeuroniNeuroniNeuron " )

print(i)

**Q17. Write a code to take a number as an input from the user and check if the number is odd or even.**

Ans:-num =int(input("Enter any number to check whether it is odd or even:"))

if (num % 2) == 0:

print("The he number is even")

else:

print ("The provided number is odd")

output :-

Enter any number to check whether it is odd or even:

**Q18. What are boolean operator?**

Ans:-It’s used to represent the truth value of an expression. For example, the expression 1 <= 2 is True, while the expression 0 == 1 is False.

The Boolean has to possible value

1.True

2. False

**Q19. What will the output of the following?**

```

1 or 0

0 and 0

True and False and True

1 or 0 or 0

```

Ans:-

```

1 or 0 = 1

0 and 0 =0

True and False and True =False

1 or 0 or 0 = 1

```

**Q20. What are conditional statements in Python?**

Ans:-Python also has some predefined conditional statements. A conditional statement as the name suggests itself, is used to handle conditions in your program. These statements guide the program while making decisions based on the conditions encountered by the program.

Conditional statement are “if……..elif………else”

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

Ans:-if… elif…else are conditional statements that provide you with the decision making that is required when you want to execute code based on a particular condition. The if… elif…else statement used in Python **helps automate that decision making process**.

**Q22. Write a code to take the age of person as an input and if age >= 18 display "I can vote". If age is < 18 display "I can't vote".**

Ans:-

age=int(input("Enter your age: "))

if age>= 18:

print("I can vote")

else:

print("I can't vote")

**Q23. Write a code that displays the sum of all the even numbers from the given list.**

```

numbers = [12, 75, 150, 180, 145, 525, 50]

```

Ans:- umbers = [12, 75, 150, 180, 145, 525, 50]

print(sum([i for i in numbers if i % 2 == 0]))

Output:- 392

**Q24. Write a code to take 3 numbers as an input from the user and display the greatest no as output.**

Ans:-

a = int(input('Enter first number : '))

b = int(input('Enter second number : '))

c = int(input('Enter third number : '))

largest = 0

if a > b and a > c:

largest = a

if b > a and b > c:

largest = b

if c > a and c > b:

largest = c

print(largest, "is the largest of three numbers.")

**Q25. Write a program to display only those numbers from a list that satisfy the following conditions**

- The number must be divisible by five

- If the number is greater than 150, then skip it and move to the next number

- If the number is greater than 500, then stop the loop

```

numbers = [12, 75, 150, 180, 145, 525, 50]

```

Ans:-

a =[12,75,150,180,145,525,50]

b =[]

for i in a:

if i>500:

break

if i>150:

continue

if i % 5==0:

b.append(i)

print(b)