## Assignment Part-1

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

**ANSWER:** Python is a high-level programming language because it is designed to allow humans to write code that will interact with a computer system without having any knowledge of processor and hardware.

Q2. Why is Python called a dynamically typed language?

**ANSWER:** Python is a dynamically typed language because of the type of the variable is determined only during runtime. We don’t need to specially mentioned the type of the variable in python.

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

**ANSWER:**

|  |  |
| --- | --- |
| **Pros** | **Cons** |
| Beginner-friendly | Slower than compiled languages |
| Extensive Libraries | High memory consumption |
| Large Community | Complex multithreading |
| Highly Scalable | Garbage collection leads to potential memory losses |
| Flexible and Extensible | Dynamically-typed language |

Q4. In what all domains can we use Python?

**ANSWER:** We can use Python in web development, data science, OS development, Scientific programming, gaming and etc

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

**ANSWER:** Variables are the names you give to computer memory locations which are used to store values in a computer program. We can declare them using following syntax variablename = variablevalue. Example: varstring = “This is Python variable declaration”

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

**ANSWER:** Using the input() function we can take an input from the user in Python.

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

**ANSWER:** Python takes all the input as a string input by default.

Q8. What is type casting?

**ANSWER:** Type casting is when you assign a value of one primitive data type to another type.

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

**ANSWER:** In Python user can take multiple values or inputs in one line by two methods. Using split() method Using List comprehension.

* Using split() method: This function helps in getting multiple inputs from user. It breaks the given input by the specified separator. If a separator is not provided then any white space is a separator. Generally, user use a split() method to split a Python string but one can use it in taking multiple input. Syntax: input().split(separator, maxsplit). Example: x, y, z = input("Enter a three value: ").split()
* Using List comprehension: List comprehension is an elegant way to define and create list in Python. We can create lists just like mathematical statements in one line only. It is also used in getting multiple inputs from a user. Example: x, y = [int(x) for x in input("Enter two values: ").split()]

Q10. What are keywords?

**ANSWER:** Keywords are predefined, reserved words used in programming that have special meanings to the compiler/interpreter.

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

**ANSWER:** No, we can’t use keywords as a variable. Keywords are reserved words that have a special meaning to the compiler/interpreter. Compiler/Interpreter reserves these words for its own use so they are not available as names for variables or methods.

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

**ANSWER:** 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.

Q13. How can we throw some output in Python?

**ANSWER:** Using the output() function we can throw output in Python.

Q14. What are operators in Python?

**ANSWER:** Operators are used to perform operations on variables and values. Python divides the operators in the multiple groups like Arithmetic operators, Assignment operators, Comparison operators, Logical operators, Identity operators, Membership operators and Bitwise operators.

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

**ANSWER:** / is regular division(returns float) and // is floor division(returns int).

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

iNeuroniNeuroniNeuroniNeuron

**ANSWER:** print("iNeuroniNeuroniNeuroniNeuron")

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

**ANSWER:**

number = int(input("Enter a number: "))

if number % 2 == 0:

print(number, "is even")

else:

print(number, "is odd")

Q18. What are boolean operator?

**ANSWER:** In Python, Boolean operators are used to perform logical operations between two Boolean expressions, which evaluate to either True or False. There are three Boolean operators in Python: and, or, not

Q19. What will the output of the following?

1 or 0

**ANSWER:** 1

0 and 0

**ANSWER:** 0

True and False and True

**ANSWER:** False

1 or 0 or 0

**ANSWER:** 1

Q20. What are conditional statements in Python?

**ANSWER:** Conditional statements in Python are used to execute different parts of code based on certain conditions. In Python, we use if, elif and else statements to create conditional statements.

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

**ANSWER:** The if keyword is used to check whether a particular condition is True or False. If the condition is True, the code block following the if statement is executed. If the condition is False, the code block following the if statement is skipped. The elif keyword is used to add additional conditions to the if statement. If the condition in the if statement is False, the program checks the condition following elif. If the condition in the elif statement is True, the code block following the elif statement is executed. If the condition in the elif statement is False, the program moves on to the next elif statement, if there is one. The else keyword is used to specify what code should be executed if none of the conditions specified in the if or elif statements are True.

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".

**ANSWER:**

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]

**ANSWER:**

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

# Initialize sum variable to 0

sum = 0

# loop through each number in the list

for num in numbers:

# check if the number is even

if num % 2 == 0:

# add the even number to the sum variable

sum += num

# print the sum of even numbers

print("Sum of even numbers:", sum)

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

**ANSWER:**

# take input from the user

num1 = float(input("Enter the first number: "))

num2 = float(input("Enter the second number: "))

num3 = float(input("Enter the third number: "))

# check which number is the greatest

if num1 > num2 and num1 > num3:

print("The greatest number is:", num1)

elif num2 > num1 and num2 > num3:

print("The greatest number is:", num2)

else:

print("The greatest number is:", num3)

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]

**ANSWER:**

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

# loop through each number in the list

for num in numbers:

# Check if the number is divisible by 5

if num % 5 == 0:

# if the number is greater than 150, skip to the next number

if num > 150:

continue

# if the number is greater than 500, stop the loop

elif num > 500:

break

# otherwise, print the number

else:

print(num)