Advanced Python Training

Assignment – 1

Just get started

1. Who developed Python Programming Language?

a) Wick van Rossum

b) Rasmus Lerdorf

c) Guido van Rossum

d) Niene Stom

2. Which type of Programming does Python support?

a) object-oriented programming

b) structured programming

c) functional programming

d) all of the mentioned

3. Which of the following is used to define a block of code in Python language?

a) Indentation

b) Key

c) Brackets

d) All of the mentioned

4. Which of the following character is used to give single-line comments in Python?

a) //

b) #

c) !

d) /*

5. Which of the following is not a core data type in Python programming?

a) Tuples

b) Lists

c) Class

d) Dictionary

6. What is the output of the code shown below?

```
sets = {1, 2, 3, 4, 4}
print(sets)
```

a) {1, 2, 3}
b) {1, 2, 3, 4}
c) {1, 2, 3, 4, 4}
d) Error

7. What data type is the object below ?

```
L = [1, 23, 'hello', 1]
```

a) List
b) Dictionary
c) Tuple
d) Array

8. What is the output of the code shown below ?

```
T = 'codes'
a, b, c, d, e = T
b = c = '*'
T = (a, b, c, d, e)
print(T)
```

a) ('c', '*', '*', 'e', 's')

b) ('c', 'o', 'd', 'e, 's')

c) ('codes', '*', '*')

d) KeyError

Programs:

1. Ask the user to enter a number that is under 50. If they enter greater than the number, display the message “Too high”, otherwise display “Thank you”.
2. Write a program to find a minimum of three numbers.
3. Ask the user to enter their favourite colour. If they enter “blue”, “BLUE” or “Blue” display the message “This is my favourite colour”, otherwise display the message “I don’t like [colour], I prefer black”.
4. Enter your first and last name in lower case. Change the case to upper and join them together. Display the finished result.
5. Write a program which accepts a sequence of comma separated 4-digit binary numbers as its input and then check whether they are divisible by 2 or not. The numbers that are divisible by 2 are to be printed in a comma separated sequence.
6. Accept a line of string input and check for the vowels inside the string.
7. Compute the area of a circle by accepting a radius input.
8. Display and give a choice to accept anyone input (1. Circle 2. Square). Now w.r.t to the input accept Radius (1.) or Length of a side(2.) to compute the area and display it on screen. If both options are not provided print “Invalid option”
9. Ask the user to enter a choice “A” or “B”. If “A” then accept an end limit and write a for loop counting from 1 to the specified limit. If “B” then accept an low limit and write a for loop counting back from 50 to the specified low limit (add necessary condtns). If both options are not provided print “Invalid option”
10. Write a Guess simulator which accepts a int input and displays True if it matches the guess integer (27) using a while loop
11. Write a Guess simulator which accepts a int input less than 10 and displays True if it matches the guess integer using a random module
12. Define a list of 5 countries, display it. Ask the user to enter a choice from above countries, and display the index from the list(add necessary conditions)
13. Write a program to match two strings, if matches display “Correct!” else “Please try again”
14. Given two strings, s1 and s2. Write a program to create a new string s3 made of the first char of s1, then the last char of s2, Next, the second char of s1 and second last char of s2, and so on. Any leftover chars go at the end of the result.
15. Insert a list with random values, cap the list length to 10 items and return the list
16. Given a list in Python and a number x, count the number of occurrences of x in the given list. (Input: l1 = [15, 6, 7, 10, 12, 20, 10, 28, 10], x = 10)
17. Construct a list with 100 elements. Create a new list which will have odd values from the original list. Slice it based on the limits of your choice. This creates a new list which is fed for a random module as a seed to generate a number. Accept an input from the user and check this value, if its equal print “I am lucky..!”, else display “Please try again”. Use all the conditionals and iterables as necessary.
18. Write a Python function to create and print a list where the values are the squares of numbers between 1 and 100 (both included).

19. Print list in reverse order using a loop (without using built-in reverse function)
20. Create a square nd array and access the items diagonal elements inside using indexing
21. Create a dictionary of 2 classes with 5 students having random names as keys and values are the marks scored by the students for Maths, Science and Social.
22. Write a Python program that creates a dictionary where keys are food names and prices are instances of the Food named tuple.
23. Write a “greet” function (def greet(name, age=18): pass). Show that the function behaviour changes wrt the arguments
    a. Positional only
    b. Keyword only
    c. Position and keyword
    d. Pass extra arguments
    e. Pass extra keyword arguments
24. Write an example program to create function calculation () which accepts the arguments and return the computation based on the keyword argument.

    Ex. Keywords-addition, subtraction, multiplication, division, args – 2 values.
25. Write a program to create a function show_employee() using the following conditions.
    a. It should accept the employee’s name and salary and display both.
    b. If the salary is missing in the function call then assign default value 5000 to salary.
26. Greet a user “Hello {}!” by accepting user as input. Use lambda function for this example
27. Write a Python program to check whether a given string is a number or not using Lambda.
28. Write a program to return maximum and minimum of two numbers Using Ternary Operator
29. Write a Python function that checks whether a passed string is a palindrome or not. Implement it using generators.
30. Implement a custom module using the problem from (23 question), call this module inside the current module by defining the inputs and displaying the results.