ATIF ALI KHAN

alikhanatif842@gmail.com

1. How can you randomize the items of a list in place in Python??

import random

list1 = [1, 2, 3, 4, 5,6,7,8]

random.shuffle(list1)

print(list1)

2. What does [::-1] do?

Ans.It helps in printing the sequence in reverse order doesn’t matter if it's list or dictionary or string.

3. What is the lambda function in Python?

It helps in creating simple one-line functions which takes less time to compile, and it’s mentioned by using keyword lambda.

variable = lambda lamvariable1, lamvariable2: lamvariable1+lamvariable2

print ("lambda function")

numbers = [1, 2, 3, 4, 5]

squared = list(map(lambda x: x\*\*2, numbers))

print(squared)

4. What Is the Difference Between Classmethod and Staticmethod?

ans. Classmethod are used when the respective method involves class attributes, and which takes respective class as an argument(cls) and can be accessed by both instance and class.

Static methods are used by instatnces they dont depend on class attributes for values and they don't take class as an argument.

5. What do you understand by Tkinter??

ans. Tkinter is used to create gui's for desktop applications which is compactable on mac, Linux, mac os, it has varities of functions like event driven, cross platform, light weight.

6What is GIL and what are some of the ways to get around it?

ans.GIL is like interpreter lock because in CPython we can handle only on thread at a time, multi-threading on 1 interpreter is not possible, if you want to do multi-processing then we must import pool from multiprocessing

7. Write a code to display the contents of a file in reverse.?

def reverse\_file(file\_name):

try:

with open(file\_name, 'r') as file:

data = file.read()

reverse = data[::-1]

print(reverse)

except FileNotFoundError:

print(f"Error: File '{file\_name}' not found.")

reverse\_file(abc.txt)

8. Which one of the following is not the correct syntax for creating a set in Python?

set([[1,2],[3,4],[4,5]])

set([1,2,2,3,4,5])

{1,2,3,4}

set((1,2,3,4))

ans.set([[1,2],[3,4],[4,5]])

9. How do you iterate over a list and pull element indices at the same time?

#ans. By using enumerate () we can pull and simultaneously iterate over a list takes single and multiple arguments in which 1 argument hast to be the name of the list

10. What is docstring in Python?

# ans. docstring is an opening brief documentation of what the following method, class defined below is capable, just a brief definition of the module

11. What Are Generator Functions? Write Your Version of Range

#ans. enables you to repeatedly generate a lengthy sequence of data in memory without creating the complete sequence at once. They are used to generate iterators and are produced one at a time using the yield keyword.

12. How many ways can you append or concatenate strings? Which of these ways is fastest? Easiest to read?

Ans. To append and concatenate we can use operators like +, += and methods like join (), format if we are looking for efficient way then. join () method is fastest.

13. What is pickling and unpickling in Python?

Ans. It helps in serialization process where a python object is converted into byte stream which helps in ease during transferring, saving and regenerating (later) processes. Unpickling is the reverse of pickling where a series of byte stream are converted into python object.

14. Demonstrate monkey patching and where is it used

Ans.it’s a technique used in dynamic programming where we extend or modify a existing class

Monkey patching is used for testing purposes, fixing bugs.

# operations.py

class Sum:

def add(self, a, b):

return a + b

# monkey\_patch\_example.py

from operations import Sum

# Define a function to log inputs and outputs

def log\_args\_and\_result(func):

def wrapper(self, \*args, \*\*kwargs):

result = func(self, \*args, \*\*kwargs)

print(f"Method {func.\_\_name\_\_} called with arguments: {args}, result: {result}")

return result

return wrapper

# Monkey patching the add method

Sum.add = log\_args\_and\_result(Sum.add)

# Now, when we use the add method, it will log the inputs and outputs

sum = Sum()

result = sum.add(2, 5)

15. I'm getting a maximum recursion depth error for a function. What does this mean? How can I mitigate the problem?

Ans.it usually happens when we didn’t mention the limit, i.e., we need to put a limit for program to stop at that point, if we didn’t then the program keeps on repeating N number of times by this the static array for recursion is overloaded and thus this error is encountered. we can avoid this error by make sure you keep an endpoint and make sure it gets accessed by the method’s loop where the recursive program terminates and exits loops.

16. How do you split the data into train and test datasets?

Ans. We do it by importing scikit library, for machine learning it is one of the libraries which helps in understanding and performing ML concepts, we do it by following method.

from sklearn.model\_selection import train\_test\_split

X\_train, X\_test, y\_train, y\_test = train\_test\_split(X, y, test\_size=0.2, random\_state=30)

In this the training and testing data are same we just divided the data into 80% for training and 20% for testing, random\_seed is used to stop continuous randomizing.

17. What are \*args and \*\*kwargs in Python functions?

Ans. while we pass values for parameters in functions we usually define the number of arguments hence its limited but while using are \*args and \*\*kwargs we can use multiple positional and keyword arguments, positional means regular arguments, while keyword means like you are defining in that parameter itself like func(posargu1, posargu2,keyargu1=value1,keyargu2=value2)

18. What’s your favorite standard library module?

Ans there are many standard library modules like os,math,random,datetime,json while I would say random library is more fun to play with