Script:

Python Interview Question – Frequency of Elements in a List

(I will be the host,interviewer and candidate too)

Hook📌 :

*Me :

"Aaj ka sawaal hai ek aisa coding puzzle jo interviews mein dimaag ghooma deta hai! 🤯"
"Mujhe batao—Python mein list ke har element ki frequency kaise nikaloge?"

(Ek chhoti si list di screen pe)

"Ab apse interviewer expect karta hai ekdum mast optimized solution! 🤔"
"Agar tumhe bhi coding interviews mein aise tricky questions confuse karte hain, toh ruk jao! Aaj hum ye question solve karenge, step by step! 🚀"

Scene 1: Virtual Interview Starts📌:

Interviewer🧑‍💼 :

"Alright, Candidate! Aapko ek Python list di gayi hai samne, aur aapko har element ki frequency find out karni hai. Bataiye kaise karenge?"

Candidate🧑‍💻 :

*Bahut simple hai! Hum ya toh **loop** ka use kar sakte hain, ya **collections.Counter** ka!*

Interviewer🧑‍💼 :

"Hmm... Multiple approaches bataiye, aur ek optimized solution bhi dijiye!"

Scene 2, Solution 1: Using a Loop (Basic Approach)📌 :

Candidate🧑‍💻:
*"Pehla approach : hum ek **empty dictionary** lenge, aur har element ki counting manually*

karenge."

(While i am typing the code , explaining sidewise)

"Hum sabse pehle ek function define karenge , count_frequency aur argument pass karenge ek list , lst

Is function ke andar, ek empty dictionary , freq define karenge.

Ab loop chalayenge lst par, check karenge agr item already exist karta hai dictionary freq mein .

Agr haan to us freq mein us item k value ka count +1 se increment kardenge.

Aur agar nahin , to freq mein item ki value ko count = 1 assign kardenge.

Ab dictionary,freq return karenge."

```python
def count_frequency(lst):
    freq = {}  # Empty dictionary to store frequency
    for item in lst:
        if item in freq:
            freq[item] += 1  # If item exists, increment count
        else:
            freq[item] = 1  # If new item, set count to 1
    return freq
```

"Ye to hogya hamara code ready , ab is function ko call karke check karte hain with a list"
(Will type the code alongside and run the code)

```python
# Example usage
numbers = [1, 2, 2, 3, 3, 3, 4, 4, 4, 4]
print(count_frequency(numbers))
```

🔍 **Output(shown on screen):** *{1: 1, 2: 2, 3: 3, 4: 4}*

Interviewer🧑‍💼 :

"Hmm… Yeh toh theek hai, lekin agar list bahut badi ho toh ye slow hoga na?"

Candidate🧑‍💻 :

*Haan , Iske liye **collections.Counter** ka use karenge! Ekdum shortcut tareeka hai!"*

Scene 3, Solution 2: Using collections.Counter📌:

Candidate 🧑‍💻 :[types code and explains]
"Python me ek built-in module collections hota hai jo Counter provide karta hai. Yeh internally optimized hota hai aur sirf ek line me apko solution de dega!"

```python
from collections import Counter

numbers = [1, 2, 2, 3, 3, 3, 4, 4, 4, 4]
freq = Counter(numbers)
print(freq)
```

🔍 **Output(Shown on screen):** *Counter({4: 4, 3: 3, 2: 2, 1: 1})*

Interviewer🧑‍💼 :
"Great! Aur yeh work kaise karta hai?"

Candidate 🧑‍💻 :

*Counter ek dictionary ki tarah kaam karta hai, lekin internally **optimized hashing** ka use karta hai. Isliye **fast aur efficient** hota hai!"*

Scene 4, Solution 3: Using collections.Counter 📌:

Candidate 🧑‍💻 :

"Agar aap data science ya pandas use karte hain, toh yeh aur bhi aasan ho jata hai!"

Candidate(while typing):

Sabse pehle hum Pandas module import karenge.

Aur humne ek list banayi,jisme kuch numbers repeat ho rahe hain

Pandas ek powerful library hai jo data handling ke kaam aati hai, aur yeh trick yahi kaam aasan karne wali hai!

Ab humne ek pandas use krke DataFrame banaya jisme ek column hai—'Numbers'—jo hamari list store kar raha hai. Matlab humne list ko ek table jaisa format de diya!

Aur yeh lo, ek hi line me kaam ho gaya!

value_counts() function automatically bata dega ki kaun sa number kitni baar repeat ho raha hai. Matlab bina loop likhe, bina extra coding ke—seedha result!

```python
import pandas as pd

numbers = [1, 2, 2, 3, 3, 3, 4, 4, 4, 4]
df = pd.DataFrame({'Numbers': numbers})
print(df['Numbers'].value_counts())
```

📊 **Example Output:**

```yaml
4    4
3    3
2    2
1    1
Name: Numbers, dtype: int64
```

*Me :

Toh agar aapko kabhi kisi list ki frequency nikalni ho, toh value_counts() ka use karna na bhoolein. Smart log Pandas ka use karte hain!

Call-to-Action📌 :

Me :

To ab aap batao, aapka favorite method kaunsa hai? Loop, Counter ya Pandas? Comment karke batao ki aap interview me kaunsa tareeka use karoge

*Agar yeh video useful lagi, toh **LIKE aur subscribe karo** aur agar aapko aur interview questions chahiye, to bell icon daba do!*

Practice Karo, Interview Crack Karo!

Milte hain next video me!