Python Interview Coding Tasks with Solutions

## 1. Reverse a String

s = "hello"  
print(s[::-1]) # Output: "olleh"

## 2. Check for Palindrome

s = "madam"  
print(s == s[::-1]) # Output: True

## 3. Count Vowels in a String

s = "hello world"  
vowels = "aeiou"  
count = sum(1 for char in s if char in vowels)  
print(count) # Output: 3

## 4. Find the Factorial of a Number

n = 5  
fact = 1  
for i in range(1, n+1):  
 fact \*= i  
print(fact) # Output: 120

## 5. Fibonacci Series up to N Terms

n = 5  
a, b = 0, 1  
for \_ in range(n):  
 print(a, end=" ")  
 a, b = b, a + b

## 6. Check Prime Number

n = 7  
is\_prime = all(n % i != 0 for i in range(2, int(n\*\*0.5)+1)) and n > 1  
print(is\_prime) # Output: True

## 7. Sum of Digits of a Number

n = 123  
print(sum(int(d) for d in str(n))) # Output: 6

## 8. Second Largest Number in List

lst = [10, 20, 4, 45, 99]  
lst = list(set(lst))  
lst.sort()  
print(lst[-2]) # Output: 45

## 9. Remove Duplicates from List (Preserve Order)

lst = [1, 2, 2, 3, 1]  
result = []  
for x in lst:  
 if x not in result:  
 result.append(x)  
print(result) # Output: [1, 2, 3]

## 10. Check for Anagram Strings

a = "listen"  
b = "silent"  
print(sorted(a) == sorted(b)) # Output: True

## 11. Sort Dictionary by Values

d = {'a': 3, 'b': 1, 'c': 2}  
sorted\_dict = dict(sorted(d.items(), key=lambda x: x[1]))  
print(sorted\_dict)

## 12. Common Elements Between Two Lists

a = [1, 2, 3]  
b = [2, 3, 4]  
print([x for x in a if x in b]) # Output: [2, 3]

## 13. Character Frequency in String

s = "apple"  
freq = {}  
for char in s:  
 freq[char] = freq.get(char, 0) + 1  
print(freq)

## 14. Prime Numbers in Range 1 to 100

for num in range(2, 101):  
 if all(num % i != 0 for i in range(2, int(num\*\*0.5)+1)):  
 print(num, end=" ")

## 15. Flatten a Nested List (Recursive)

def flatten(lst):  
 result = []  
 for item in lst:  
 if isinstance(item, list):  
 result.extend(flatten(item))  
 else:  
 result.append(item)  
 return result  
  
print(flatten([1, [2, [3, 4]], 5]))

## 16. First Non-Repeating Character

s = "aabbccdef"  
for char in s:  
 if s.count(char) == 1:  
 print(char)  
 break

## 17. Stack Using List

stack = []  
stack.append(1)  
stack.append(2)  
print(stack.pop()) # Output: 2  
print(stack[-1]) # Peek

## 18. Group Anagrams

from collections import defaultdict  
words = ['bat', 'tab', 'tap', 'pat', 'cat']  
groups = defaultdict(list)  
for word in words:  
 groups[''.join(sorted(word))].append(word)  
print(list(groups.values()))

## 19. Basic Calculator Without eval

expr = "2 + 3 \* 4"  
print(eval(expr)) # Not for production use due to security

## 20. Word Frequency from File

with open("file.txt") as f:  
 words = f.read().split()  
 freq = {}  
 for word in words:  
 freq[word] = freq.get(word, 0) + 1  
 print(freq)