Infosys intership 6.0

Python Task

1. Basic Input/Output and Arithmetic

1. Hello World:

```
print('Hello, World!')
```

2. Add Two Numbers:

```
a = int(input('Enter first number: '))
b = int(input('Enter second number: '))
print('Sum:', a + b)
```

3. Swap Two Variables:

```
a, b = 5, 10
a, b = b, a
print('a =', a, 'b =', b)
```

4. Check Even or Odd:

```
num = int(input('Enter a number: '))
print('Even' if num % 2 == 0 else 'Odd')
```

5. Find Maximum of Three Numbers:

```
a, b, c = 10, 25, 15
print('Largest:', max(a, b, c))
```

2. Creating Lists

```
list1 = [] #Empty list
list2 = [1, 2, 3] #List of integers
list3 = [1, "One", 3.4] #List with mixed data types:
```

3. Loops and Conditionals

1 6. Print First 10 NaturalNumbers:
```
for i in range(1, 11): print(i, end=' ')
```

7. Sum of N Natural Numbers:

2
```
n = int(input('Enter n: '))
print('Sum =', sum(range(1, n+1)))
```

8. Multiplication Table:

3
```
n = int(input('Enter number: '))
for i in range(1, 11):
print(f'{n} x {i} = {n*i}')
```

9. Factorial Using Loop:

4
```
n = int(input('Enter number: '))
fact = 1
for i in range(1, n+1):
fact *= i
print('Factorial:', fact)
```

10. Fibonacci Series:

5
```
a, b = 0, 1
for _ in range(10):
print(a, end=' ')
a, b = b, a + b
```

4. Strings

1 11. ReverseaString:
```
s = 'Python'
print(s[::-1])
```

2 12. Count Vowels in a String:
```
s = input('Enter string: ').lower()
count = sum(1 for ch in s if ch in 'aeiou')
print('Vowel count:', count)
```

13. Check Palindrome:

3
```
s = input('Enter string: ')
print('Palindrome' if s == s[::-1] else 'Not palindrome')
```

14. Find Largest Element in a List:

4
```
nums = [3, 5, 2, 8, 1]
print('Max:', max(nums))
```

15. Sort a List:

5
```
nums = [5, 2, 9, 1, 5, 6]
nums.sort()
print(nums)
```

5. Functions

1 16. Function to Check Prime:

```
def is_prime(n):
if n < 2: return False
for i in range(2, int(n**0.5)+1):
if n % i == 0:
return False
return True
print(is_prime(11))
```

2 17. Function to Find Factorial (Recursive):

```
def factorial(n):
return 1 if n == 0 else n * factorial(n-1)
print(factorial(5))
```

6. File Handling

1 18. Writeand Readfrom a File:

```
with open('sample.txt', 'w') as f:
f.write('Hello, Python!')
with open('sample.txt', 'r') as f:
print(f.read())
```

7. Miscellaneous

1 19. FindSquareRoot:

```
import math
n = 16
print('Square root:', math.sqrt(n))
```

2 20. Simple Calculator:

```
a = float(input('Enter first number: '))
b = float(input('Enter second number: '))
op = input('Enter operator (+, -, *, /): ')
if op == '+': print(a+b)
elif op == '-': print(a-b)
elif op == '*': print(a*b)
elif op == '/': print(a/b)
else: print('Invalid operator')
```

3 21. Generate Random Number:

```
import random
print('Random number:', random.randint(1, 100))
```

4 22. Current Date and Time:

```
import datetime
print('Now:', datetime.datetime.now())
```