

## 1.LEAP YEAR

main.py	Output
<pre>1 year = int(input("Enter a year: ")) 2 if (year % 400 == 0) or (year % 4 == 0 and year % 100 != 0): 3     print("Leap year") 4 else: 5     print("Not a leap year")</pre>	<pre>Enter a year: 2024 Leap year  === Code Execution Successful ===</pre>

## 2. SWAP

main.py	Output
<pre>1 a = int(input("Enter first number: ")) 2 b = int(input("Enter second number: ")) 3 a, b = b, a 4 print("After swapping: a =", a, "b =", b)</pre>	<pre>Enter first number: 18 Enter second number: 4 After swapping: a = 4 b = 18  === Code Execution Successful ===</pre>

## 3.PRIME NUMBER

main.py	Output
<pre>1 n = int(input("Enter a number: ")) 2 flag = 0 3 if n &gt; 1: 4     for i in range(2, n): 5         if n % i == 0: 6             flag = 1 7             break 8 if flag == 0 and n &gt; 1: 9     print("Prime number") 10 else: 11     print("Not a prime number")</pre>	<pre>Enter a number: 5 Prime number  === Code Execution Successful ===</pre>

## 4.PALINDROME

main.py	Output
<pre>1 s = input("Enter a string: ") 2 if s == s[::-1]: 3     print("Palindrome") 4 else: 5     print("Not a palindrome") 6 7</pre>	<pre>Enter a string: AKSHAYA Not a palindrome  === Code Execution Successful ===</pre>

## 5.FIBNACCI SERIES

main.py	Run	Output
<pre>1 terms = int(input("Enter number of terms: ")) 2 a, b = 0, 1 3 print("Fibonacci Series:") 4 for i in range(terms): 5     print(a, end=" ") 6     c = a + b 7     a = b 8     b = c 9 print()</pre>		<pre>Enter number of terms: 5 Fibonacci Series: 0 1 1 2 3  === Code Execution Successful ===</pre>

## 6. SECOND ORDER HOMOGENEOUS RECURSION

main.py	Run	Output
<pre>1 n = int(input("Enter number of terms for recurrence: ")) 2 a0 = int(input("Enter a0: ")) 3 a1 = int(input("Enter a1: ")) 4 print("Series:") 5 print(a0, a1, end=" ") 6 for i in range(2, n): 7     an = a1 + a0 8     print(an, end=" ") 9     a0 = a1 10    a1 = an 11 print()</pre>		<pre>Enter number of terms for recurrence: 3 Enter a0: 1 Enter a1: 2 Series: 1 2 3  === Code Execution Successful ===6</pre>

## 7.RECURSION FACTORIAL

main.py	Run	Output
<pre>1 def fact(num): 2     if num == 0 or num == 1: 3         return 1 4     else: 5         return num * fact(num - 1) 6 7 num = int(input("Enter number for factorial: ")) 8 print("Factorial of", num, "is", fact(num)) 9 10</pre>		<pre>Enter number for factorial: 4 Factorial of 4 is 24  === Code Execution Successful ===</pre>

## 8.BIGGEST NUMBER

main.py	Output
<pre>1 arr = [] 2 n = int(input("Enter number of elements: ")) 3 for i in range(n): 4     val = int(input("Enter element: ")) 5     arr.append(val) 6 7 big = arr[0] 8 for i in range(1, n): 9     if arr[i] &gt; big: 10         big = arr[i] 11 print("Biggest number:", big)</pre>	<pre>Enter number of elements: 4 Enter element: 13 Enter element: 10 Enter element: 14 Enter element: 19 Biggest number: 19  === Code Execution Successful ===</pre>

## 9.SELECTION SORT

main.py	Output
<pre>1 a = list(map(int, input("Enter numbers separated by space: ").split())) 2 n = len(a) 3 for i in range(n - 1): 4     m = i 5     for j in range(i + 1, n): 6         if a[j] &lt; a[m]: 7             m = j 8     a[i], a[m] = a[m], a[i] 9 print("Sorted:", a)</pre>	<pre>Enter numbers separated by space: 1 2 3 5 2 7 2 4 3 Sorted: [1, 2, 2, 2, 3, 3, 4, 5, 7]  === Code Execution Successful ===</pre>

## 10.DUPLICATE

main.py	Output
<pre>1 n = int(input("Enter number of elements: ")) 2 a = [int(input()) for _ in range(n)] 3 4 f = 0 5 for i in range(n): 6     for j in range(i+1, n): 7         if a[i] == a[j]: 8             print("Duplicate:", a[i]) 9             f = 1 10            break 11 if f == 0: 12     print("No duplicates")</pre>	<pre>Enter number of elements: 6 4 2 6 2 8 4 Duplicate: 4 Duplicate: 2  === Code Execution Successful ===</pre>