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**Sec-A**

## **DEPARTMENT-COMPUTER APPLICATION**

### **1. Convert Temperature from Celsius to Fahrenheit**

```
def celsius_to_fahrenheit(celsius):
```

```
    fahrenheit = (celsius * 9/5) + 32
```

```
    return fahrenheit
```

```
celsius = 25
```

```
print(f"{celsius}°C is equal to {celsius_to_fahrenheit(celsius)}°F")
```

**Output-**

**25°C is equal to 77.0°F**

### **2. Swap Two Numbers**

```
def swap_numbers(a, b):
```

```
    a, b = b, a
```

```
    return a, b
```

```
a = 5
```

```
b = 10
```

```
a, b = swap_numbers(a, b)
```

```
print(f"Swapped numbers: a = {a}, b = {b}")
```

**Output-**

**Swapped numbers: a = 10, b = 5**

### **3. Check Whether a Given Year is a Leap Year**

```
def is_leap_year(year):
```

```
    if (year % 4 == 0 and year % 100 != 0) or (year % 400 == 0):
```

```
        return True
```

```
    else:
        return False
year = 2024
if is_leap_year(year):
    print(f"{year} is a leap year.")
else:
    print(f"{year} is not a leap year.")
```

**Output-**

**2024 is a leap year.**

#### **4. Display Reverse of a Number**

```
def reverse_number(num):
    reversed_num = int(str(num)[::-1])
    return reversed_num
num = 12345
print(f"Reverse of {num} is {reverse_number(num)}")
```

**Output-**

**Reverse of 12345 is 54321**

#### **5. Find Factors of a Given Number**

```
def find_factors(n):
    factors = []
    for i in range(1, n + 1):
        if n % i == 0:
            factors.append(i)
    return factors
n = 28
print(f"Factors of {n} are {find_factors(n)}")
```

**Output-**

**Factors of 28 are [1, 2, 4, 7, 14, 28]**

**6. Generate Prime Number Series up to n**

```
def is_prime(num):
```

```
    if num <= 1:
```

```
        return False
```

```
    for i in range(2, int(num**0.5) + 1):
```

```
        if num % i == 0:
```

```
            return False
```

```
    return True
```

```
def prime_series(n):
```

```
    primes = []
```

```
    for num in range(2, n + 1):
```

```
        if is_prime(num):
```

```
            primes.append(num)
```

```
    return primes
```

```
n = 50
```

```
print(f"Prime numbers up to {n} are {prime_series(n)}")
```

**Output-**

**Prime numbers up to 50 are [2, 3, 5, 7, 11, 13, 17, 19, 23, 29, 31, 37, 41, 43, 47]**

**7. Display Numbers Divisible by 7 but Not a Multiple of 5 Between 1000 and 2000**

```
def divisible_by_7_not_5():
```

```
    numbers = []
```

```
    for num in range(1000, 2001):
```

```
        if num % 7 == 0 and num % 5 != 0:
```

```
            numbers.append(num)
```

```
    return numbers

print("Numbers divisible by 7 but not multiple of 5 between 1000 and 2000 are:")

print(divisible_by_7_not_5())
```

**Output-**

**Numbers divisible by 7 but not multiple of 5 between 1000 and 2000 are:[1001, 1008, 1022, 1029, 1036, 1043, 1057, 1064, 1071, 1078, 1092, 1099, 1106, 1113, 1127, 1134, 1141, 1148, 1162, 1169, 1176, 1183, 1197, 1204, 1211, 1218, 1232, 1239, 1246, 1253, 1267, 1274, 1281, 1288, 1302, 1309, 1316, 1323, 1337, 1344, 1351, 1358, 1372, 1379, 1386, 1393, 1407, 1414, 1421, 1428, 1442, 1449, 1456, 1463, 1477, 1484, 1491, 1498, 1512, 1519, 1526, 1533, 1547, 1554, 1561, 1568, 1582, 1589, 1596, 1603, 1617, 1624, 1631, 1638, 1652, 1659, 1666, 1673, 1687, 1694, 1701, 1708, 1722, 1729, 1736, 1743, 1757, 1764, 1771, 1778, 1792, 1799, 1806, 1813, 1827, 1834, 1841, 1848, 1862, 1869, 1876, 1883, 1897, 1904, 1911, 1918, 1932, 1939, 1946, 1953, 1967, 1974, 1981, 1988]**

#### **8. Check Whether a Number is a Palindrome or Not**

```
def is_palindrome(num):

    return str(num) == str(num)[::-1]

num = 121

if is_palindrome(num):

    print(f"{num} is a palindrome.")

else:

    print(f"{num} is not a palindrome.")
```

**Output-**

**121 is a palindrome.**

#### **9. Check Whether a Number is a Perfect Number or an Armstrong Number**

```
def is_perfect_number(num):

    sum_of_divisors = sum([i for i in range(1, num) if num % i == 0])

    return sum_of_divisors == num

def is_armstrong_number(num):
```

```

num_str = str(num)
num_len = len(num_str)
sum_of_powers = sum(int(digit)**num_len for digit in num_str)
return sum_of_powers == num

num = 28

if is_perfect_number(num):
    print(f"{num} is a perfect number.")
else:
    print(f"{num} is not a perfect number.")

num = 153

if is_armstrong_number(num):
    print(f"{num} is an Armstrong number.")
else:
    print(f"{num} is not an Armstrong number.")

```

**Output-**

**28 is a perfect number.**

**153 is an Armstrong number.**

**10. Generate the Fibonacci Series Up to n**

```

def fibonacci_series(n):
    fib_series = [0, 1]
    while len(fib_series) < n:
        fib_series.append(fib_series[-1] + fib_series[-2])
    return fib_series[:n]

n = 10

print(f"Fibonacci series up to {n} terms: {fibonacci_series(n)}")

```

**Output-**

**Fibonacci series up to 10 terms: [0, 1, 1, 2, 3, 5, 8, 13, 21, 34]**

**11. Program to Print Your Name**

```
def print_name(name):
```

```
    Print(f"Your name is: {name}")
```

```
Print_name("John Doe")
```

**12. Program to Add Two Numbers**

```
def add_numbers(a, b):
```

```
    return a + b
```

```
a = 5
```

```
b = 10
```

```
Print(f"The sum of {a} and {b} is {add_numbers(a, b)}")
```

**13. Program to Change Temperature from Celsius to Fahrenheit**

```
def celsius_to_fahrenheit(celsius):
```

```
    Fahrenheit = (celsius * 9/5) + 32
```

```
    Return fahrenheit
```

```
Celsius = 25
```

```
Print(f"{celsius}°C is equal to {celsius_to_fahrenheit(celsius)}°F")
```

**14. Program to Change Temperature from Fahrenheit to Celsius**

```
def fahrenheit_to_celsius(fahrenheit):
```

```
    Celsius = (fahrenheit - 32) * 5/9
```

```
    Return celsius
```

```
Fahrenheit = 77
```

```
Print(f"{fahrenheit}°F is equal to {fahrenheit_to_celsius(fahrenheit)}°C")
```

**15. Program to Find Area and Perimeter of a Rectangle**

```
def rectangle_area_perimeter(length, width):  
    Area = length * width  
    Perimeter = 2 * (length + width)  
    Return area, perimeter  
  
Length = 5  
Width = 3  
  
Area, perimeter = rectangle_area_perimeter(length, width)  
Print(f"Area of rectangle: {area}, Perimeter of rectangle: {perimeter}")
```

#### 16.Program to Find Area and Perimeter of a Circle

```
Import math  
  
def circle_area_perimeter(radius):  
    Area = math.pi * radius ** 2  
    Perimeter = 2 * math.pi * radius  
    Return area, perimeter  
  
Radius = 7  
  
Area, perimeter = circle_area_perimeter(radius)  
Print(f"Area of circle: {area}, Perimeter of circle: {perimeter}")
```

#### 17.Program to Display Whether a Number is Odd or Even

```
def odd_or_even(num):  
    if num % 2 == 0:  
        return "even"  
    else:  
        return "odd"  
  
num = 4  
  
Print(f"{num} is {odd_or_even(num)}")
```

#### 18.Program to Check if a Number is Positive or Negative

```
def positive_or_negative(num):  
    If num > 0:  
        return "positive"  
    elif num < 0:  
        return "negative"  
    else:  
        return "zero"  
num = -5  
print(f"{num} is {positive_or_negative(num)}")
```

Output-

Enter a number: 12

The number 12.0 is positive.

### 19. Program to Find Maximum of Three Numbers

```
def maximum_of_three(a, b, c):  
    return max(a, b, c)  
a = 5  
b = 10  
c = 3  
print(f"The maximum of {a}, {b}, and {c} is {maximum_of_three(a, b, c)}")
```

Output-

Enter the first number: 10

Enter the second number: 20

Enter the third number: 30

The maximum of 10.0, 20.0, and 30.0 is 30.0



## **20.Program to Swap Two Numbers**

```
def swap_numbers(a, b):
```

```
    a, b = b, a
```

```
    return a, b
```

```
a = 5
```

```
b = 10
```

```
a, b = swap_numbers(a, b)
```

```
print(f"Swapped numbers: a = {a}, b = {b}")
```

**Output-**

**Enter the first number: 12**

**Enter the second number: 22**

**After swapping: First number is 22.0 and second number is 12.0**