

1. Write a Python function to check whether a string is a pangram or not.  
Note : Pangrams are words or sentences containing every letter of the alphabet at least once.  
For example : "The quick brown fox jumps over the lazy dog"

#### CODE

```
def is_pangram(s):  
  
    s = s.lower()  
  
    letters = set()  
  
    for ch in s:  
  
        if 'a' <= ch <= 'z':  
  
            letters.add(ch)  
  
    return len(letters) == 26  
  
text = "The quick brown fox jumps over the lazy dog "  
print(is_pangram(text))
```

#### OUTPUT

```
C:\Users\Admin\PycharmProjects\PythonProject6\Preparation\.venv\Scripts\python.exe C:\Users\Admin\PycharmProjects\PythonProject6\Preparation\Q1.py  
True  
  
Process finished with exit code 0
```

Q.2) Write a Python program to calculate the sum of the digits in an integer.

#### CODE

```
num = int(input("Enter an integer: "))  
  
sum_digits = sum(int(digit) for digit in str(abs(num)))  
  
print("Sum of digits:", sum_digits)
```

#### OUTPUT

```
C:\Users\Admin\PycharmProjects\PythonProject6\Preparation\.venv\Scripts\python.exe C:\Users\Admin\PycharmProjects\PythonProject6\Preparation\Q1.py
Enter an integer: 512
Sum of digits: 8

Process finished with exit code 0
```

Q.3) Write a Python program to sort three integers without using conditional statements and loops. [ u can use built in functions for this ]

#### CODE

```
a = int(input("Enter first number:"))
b = int(input("Enter second number:"))
c = int(input("Enter third number:"))

sorted_num = sorted((a,b,c))
print("sorted num:",sorted_num)
```

#### OUTPUT

```
C:\Users\Admin\PycharmProjects\PythonProject6\Preparation\.venv\Scripts\python.exe C:\Users\Admin\PycharmProjects\PythonProject6\Preparation\Q1.py
Enter first number:26
Enter second number:15
Enter third number:2
sorted num: [2, 15, 26]
```

Q.4) Write a Python function to check whether a number is perfect or not.

According to Wikipedia : In number theory, a perfect number is a positive integer that is

equal to the sum of its proper positive divisors, that is, the sum of its positive divisors excluding the number itself (also known as its aliquot sum). Equivalently, a perfect number is a number that is half the sum of all of its positive divisors (including itself). Example : The first perfect number is 6, because 1, 2, and 3 are its proper positive divisors, and  $1 + 2 + 3 = 6$ . Equivalently, the number 6 is equal to half the sum of all its positive divisors:  $(1 + 2 + 3 + 6) / 2 = 6$ . The next perfect number is 28 =  $1 + 2 + 4 + 7 + 14$ . This is followed by the perfect numbers 496 and 8128.

#### CODE

```
def is_perfect(n):
    if n <= 0:
        return False

    sum_div = 0

    for i in range(1, n):
        if n % i == 0:
            sum_div += i

    if sum_div == n:
        return True
    else:
        return False

num = int(input("Enter a number: "))

if is_perfect(num):
    print(num, "is a Perfect Number")
else:
    print(num, "is NOT a Perfect Number")
```

#### OUTPUT

```
C:\Users\Admin\PycharmProjects\PythonProject6\Preparation\.venv\Scripts\python.exe C:\Users\Admin\PycharmProjects\PythonProject6\Preparation\Q4.py
Enter a number: 496
496 is a Perfect Number

Process finished with exit code 0
```

