

While loop Assignment - 3

24 September 2024

Q1. Write a python program to find the Sum of the Digits of a given number as an input.

Input	Output	Explanation
123	6	$1+2+3 = 6$
456	15	$4+5+6 = 15$
789	24	$7+8+9 = 24$

Q2. Write a python program which finds the reverse of a given number.

Input	Output	Explanation
123	321	Reverse of 123 is 321.
456	654	Reverse of 456 is 654.
789	987	Reverse of 789 is 987.

Q3. Write a python program which find the Factors of a given number as an input.

Explanation: Given an integer input, the objective is to find all the factors of the number by checking divisibility.

Input	Output	Explanation
12	1, 2, 3, 4, 6, 12	Factors of 12 are 1, 2, 3, 4, 6, and 12.
15	1, 3, 5, 15	Factors of 15 are 1, 3, 5, and 15.
18	1, 2, 3, 6, 9, 18	Factors of 18 are 1, 2, 3, 6, 9, and 18.

Q5. Write a python program which check Whether the given number as an input is a Palindrome or not.

Explanation: palindrome numbers are those whose reverse is equal to the original number.

Input	Output	Explanation
121	Palindrome	Reverse of 121 is 121, so it's a palindrome.
123	Not a Palindrome	Reverse of 123 is 321, so it's not a palindrome.
1331	Palindrome	Reverse of 1331 is 1331, so it's a palindrome.

Q6. Write a python program which finds Factorial of a Number.

Input	Output	Explanation
5	120	Factorial of 5 is $5! = 5 \times 4 \times 3 \times 2 \times 1 = 120$.
6	720	Factorial of 6 is $6! = 6 \times 5 \times 4 \times 3 \times 2 \times 1 = 720$.
0	1	Factorial of 0 is 1 (by definition).

Q7. Check Whether or Not the Number is an Armstrong Number.

Explanation: An Armstrong number is a number that equals the sum of its digits, each raised to a power (length of that number or count of digit in that number).

Input	Output	Explanation
153	Armstrong	$1^3 + 5^3 + 3^3 = 153$.
123	Not Armstrong	$1^3 + 2^3 + 3^3 \neq 123$.
370	Armstrong	$3^3 + 7^3 + 0^3 = 370$.

Q8. Write a python program to check whether or Not the given number is a Perfect Number.

Explanation: Given an integer input, the objective is to check whether the sum of its factors (excluding the number itself) equals the number. If so, the number is a Perfect Number.

Input	Output	Explanation
6	Perfect	Factors of 6 are 1, 2, 3. Sum = $1+2+3 = 6$.
28	Perfect	Factors of 28 are 1, 2, 4, 7, 14. Sum = 28.
10	Not Perfect	Factors of 10 are 1, 2, 5. Sum = $8 \neq 10$.

Q9. Write a program to enter the number till the user enters 0 and at the end it should display the sum of all the numbers entered.

Example:

Enter a number: 5

Enter a number: 8

Enter a number: 1

Enter a number: -6

Enter a number: 0

Output: 8

How output is 8:
 $5 + 8 + 1 + (-6)$
 $= 8$