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.

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| **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.

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| **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 ofthe number by checking divisibility.

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| **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.

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| **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.

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| **Input** | **Output** | **Explanation** |
| 5 | 120 | Factorial of 5 is 5! = 5×4×3×2×1 = 120. |
| 6 | 720 | Factorial of 6 is 6! = 6×5×4×3×2×1 = 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).

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| **Input** | **Output** | **Explanation** |
| 153 | Armstrong | 1³ + 5³ + 3³ = 153. |
| 123 | Not Armstrong | 1³ + 2³ + 3³ ≠ 123. |
| 370 | Armstrong | 3³ + 7³ + 0³ = 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 numberis a Perfect Number.

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| **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 ≠ 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*