**PYTHON PROGRAMMING**

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LAB-6 ANSWERS

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**1. Write a python program to reverse a number using a while loop.**

Code:

def reverse\_number(number):

    reversed\_number = 0  # Initialize variable to store the reversed number.

    while number > 0:   #check the while condition.

        digit = number % 10  # Extract the last digit of the number.

        reversed\_number = (reversed\_number \* 10) + digit  # Append the digit to the reversed number.

        number = number // 10  # Remove the last digit from the number.

    return reversed\_number  # it gives the reversed number.

number= int(input("Enter the number: ")) # Take input from the user.

print("Reversed number:", reverse\_number(number)) # Call the function and print the reversed number.

**Output:**

Enter the number: 121343

Reversed number: 343121

2. Write a python program to check whether a number is palindrome or not?

Code:

def is\_palindrome(number): #This line defines a function named is\_palindrome that takes a number as an input parameter.

    original\_number = number # itStores the original number to compare it with the reversed number later.

    reversed\_number = 0

    while number > 0:

        digit = number % 10  # Extract the last digit of the number.

        reversed\_number = (reversed\_number \* 10) + digit  # Append the digit to the reversed number.

        number = number // 10  # Remove the last digit from the number.

    if original\_number == reversed\_number:

        return True

    else:

        return False

num = int(input("Enter a number: ")) # Take input from the user.

if is\_palindrome(num): # Check if the number is a palindrome or not and print the result.

    print("The number is a palindrome.") # it prints if the given number is palindrome.

else:

    print("The number is not a palindrome.")  # it prints if the given number is not a palindrome.

Output:

Enter a number: 152

The number is not a palindrome.

Enter a number: 131

The number is a palindrome.

**3. Write a python program finding the factorial of a given number using a while loop.**

Code:

def factorial(n): #defining.

    #Calculates the factorial of a given number using a while loop.

    if n < 0: # condition.

        return "Factorial is not defined for negative numbers" # it returns the negative number.

    elif n == 0: # elseif condition.

        return 1

    else:      # else condition.

        factorial\_result = 1

        while n > 0:

            factorial\_result \*= n

            n -= 1

        return factorial\_result

number = int(input("Enter a number to find its factorial: ")) # take the input from user.

result = factorial(number)

print("Factorial of", number, "is", result) # print the factoeial of the number.

Output:

Enter a number to find its factorial: 8

Factorial of 8 is 40320.

4. Accept numbers using input() function until the user enters 0. If user input 0 then break the while loop and display the sum of all the numbers.

Code:

def sum\_of\_numbers(): # defaining

    #Accept numbers using input() function until the user enters 0.

    #Calculate the sum of all the numbers entered.

    total\_sum = 0

    while True: # Boolean condition

        try:

            num = int(input("Enter a number (enter 0 to stop): "))

# take input from user.

            if num == 0:

                break  # Break the loop if the user enters 0

            total\_sum += num

        except ValueError:

            print("Invalid input. Please enter a valid number.") # print statement.

    return total\_sum

result = sum\_of\_numbers() # Calculate the sum of numbers entered by the user.

print("Sum of all the numbers entered:", result)# print the result.

Output:

Enter a number (enter 0 to stop): 10

Enter a number (enter 0 to stop): 20

Enter a number (enter 0 to stop): 5

Enter a number (enter 0 to stop): 0

Sum of all the numbers entered: 35