2024

PYTHON PROGRAMMING

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
```