Ex.no:4 13.02.2025	**USER DEFINED FUNCTION**	URK24CS1189

1. **A) Write a python program to check whether a number is a palindrome or not using a function.**

ALGORITHM:

STEP 1: Start the program
STEP 2: Define a function as pal(n).
STEP 3: Check if n is equal to its reverse n[::-1]
STEP 4: If true, return "palindrome".
STEP 5: Otherwise, return "not a palindrome".
STEP 6: Take user input (n) as a string.
STEP 7: Call the function pal(n) and print the result.
STEP 8: end the program.

PROGRAM:

```
#URK24CS1189
num=input("enter a number:")
if num==num[::-1]:
    print("palindrome")
else:
    print("not palindrome")
```

OUTPUT:

```
enter a number:121
palindrome

=== Code Execution Successful ===
```

RESULT:

Thus the python program successfully verified using function to find if the number is palindrome or not.

B) Write a python program to check Armstrong number using the function.

ALGORITHM:

STEP 1: Start the program
STEP 2: Define a function as arm(n) and convert n to a string digits=string(n) to access individual digits.
STEP 3: Compute the sum of each number of digits power=length of digits.
STEP 4: Compute the sum of each number digit raised to the power of the number of digits.
STEP 5: Compare arm_num with n if equal return "Armstrong number" if not return "not a Armstrong number".
STEP 6: Take user input as an integer.
STEP 7: Call the function and print result .
STEP 8: end the program.

PROGRAM:

```
#urk24cs1189
def arm(n):
    digits=str(n)
    power=len(digits)
    arm_num=sum(int(digit)**power for digit in digits)
    if arm_num==n:
        return "armstrong number"
    else:
        return "not a armstrong number"
n=int(input("enter the number:"))
print(arm(n))
```

OUTPUT:

```
enter the number:153
armstrong number

=== Code Execution Successful ===
```

RESULT:

Thus the python program successfully verified using function to find if the number is Armstrong number or not.

C) Write a python functions to print the no. of uppercase, lowercase, and whitespace.

Sample input:
Enter any string: Hello, Welcome to Karunya.
Sample output:
Uppercase:3
Lowercase:18
Whitespace:3

ALGORITHM:

STEP 1: Start the program
STEP 2: Define a function as count(n) and initialize uc, lc and wc as 0.
STEP 3: Use for loop through each I in s if s.isupper() increment uc, s.islower() increment uc else if s.isspace(), increment ws.
STEP 4: Print the no.of uppercase,lowercase and spaces in the string.
STEP 5: Take input from the user
STEP 6: Call the function.
STEP 7: End the program.

PROGRAM:

```
#URK24CS1189
def count_character_types(S):
    uppercase_count=sum(1 for char in S if char.isupper())
    lowercase_count=sum(1 for char in S if char.islower())
    whitespace_count=sum(1 for char in S if char.isspace())
    print("uppercase:",uppercase_count)
    print("lowercase:",lowercase_count)
    print("whitespace:",whitespace_count)
user_input=input("enter any string: ")
count_character_types(user_input)
```

OUTPUT:

```
enter any string: Hello,Welcome to Karunya
uppercase: 3
lowercase: 18
whitespace: 2
```

RESULT:

Thus the python program successfully verified using function to find if the uppercase, lowercase and whitespace in the string