



AMICUS INTERNATIONAL SCHOOL, BHARUCH

Practical File of Computer Science (083)

ACADEMIC YEAR: 2023-24

Submitted by:

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Certificate

This is to certify that **Dipam Sen**, student of Class XII, **Amicus International School, Bharuch** has completed the PRACTICAL FILE during the academic year **2023-24** towards partial fulfilment of credit for the Computer Science practical evaluation of CBSE and submitted a satisfactory report, as compiled in the following pages, under my supervision.

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Program 1

Write a user defined function to accept a string as an input and to count and display the total number of times a character is present in a string.

Program:

```
def count_occ(str, ch):  
    count = 0  
    for i in str:  
        if i == ch:  
            count += 1  
    return count  
  
val = input("Enter a string: ")  
c = input("Enter a character: ")  
num = count_occ(val, c)  
  
print()  
print("The character occurs " + str(num) + "  
times in the string.")
```

Program 2

Write a program to compute the area of rectangle on the basis of length and breadth inputted by the user as the arguments to this function.

Program:

```
def area(l, b):  
    return l * b  
  
length = int(input("Enter length: "))  
breadth = int(input("Enter breadth: "))  
  
val = area(length, breadth)  
  
print("Area of the rectangle is", val)
```

Program 3

Write a menu driven program using different functions for the following menu:

1. Check no. is Palindrome or not
2. Check no. is Armstrong or not
3. Exit

Program:

```
def is_palindrome(num):  
    s = str(num)  
    if s == s[::-1]:  
        return True  
    return False  
  
def is_armstrong(num):  
    n = len(str(num))  
    total = 0  
    for digit in str(num):  
        total += int(digit)**n  
    if total == num:  
        return True  
    return False  
  
while True:  
    print("=====")  
    print("Menu")  
    print("=====")
```

```
print()
print("1. Check if number is Palindrome")
print("2. Check if number is Armstrong")
print("3. Exit")
choice = input("Enter your choice (1-3): ")
if choice == 1:
    num = input("Enter your number")
    if is_palindrome(num):
        print("Your number is a palindrome!")
    else:
        print("Your number is not a palindrome!")
elif choice == 2:
    num = input("Enter your number")
    if is_armstrong(num):
        print("Your number is armstrong!")
    else:
        print("Your number is not angstrom!")
elif choice == 3:
    break
else:
    continue
```

Program 4

Write a program using the function to print the Fibonacci series up to n numbers.

Program:

```
def fibonacci(n):
    # start off with 0 and 1
    a, b = 0, 1
    series = [a, b]
    while len(series) < n:
        # add the next number
        series.append(a + b)
        # a and b now point to the next two numbers
        # a points to b, b points to a+b
        a, b = b, a + b
    return series

num = int(input("Enter number of terms of
Fibonacci Sequence: "))

vals = fibonacci(num)

for val in vals:
    print(val, end="\t")
```


Program 5

Write a random number generator using function that generates random numbers between 1 to 6 (simulates a dice).

Program:

```
import random

def dice():
    return random.randint(1, 6)

print("🎲 Rolling the dice 🎲")
print("You got", dice(), "!")
```

Program 6

Write a python program to read a file named "article.txt", count and print the following:

- (i) total alphabets
- (ii) total upper case alphabets
- (iii) total lower case alphabets
- (iv) total digits
- (v) total spaces
- (vi) total special characters

Program:

```
alpha = 0
upper = 0
lower = 0
digit = 0
space = 0
spchr = 0

with open("./article.txt") as f:
    data = f.read()
    for char in data:
        if char.isalpha():
            alpha += 1
        if char.isupper():
            upper += 1
        if char.islower():
            lower += 1
        if char.isdigit():
```

```
        digit += 1
    if char.isspace():
        space += 1
    if not char.isalnum() and not
char.isspace():
        spchr += 1

    print("Total alphabets:", alpha)
    print("Total uppercase:", upper)
    print("Total lowercase:", lower)
    print("Total digits:", digit)
    print("Total spaces:", space)
    print("Total special characters:", spchr)
```

article.txt

Hello World!

Sample text 0123456789 #%^&*()