**PROBLEM SOLVING USING COMPUTERS**

**Lab 1. Sequential Instruction Based C Programs**

1. Program to print “Hello” on the Screen.

Graphical user interface, text, application

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1. Write a program to take an input of two integer numbers and print the sum of that numbers.

A screenshot of a computer

Description automatically generated

1. Convert the time in seconds to hours, minutes and seconds. (1 hr =3600 sec).

A screenshot of a computer

Description automatically generated

1. Find the sum of the digits of a four-digit number (ex 1234 sum=10) (without using a loop).

Text

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1. Convert temperature given in Fahrenheit to Centigrade and Centigrade to Fahrenheit. Hint: C=5/9(F-32)).

Text

Description automatically generated

Graphical user interface, text

Description automatically generated

1. Converting distance in mm to cm, inch, feet (1 cm =10mm, 1inch=2.5cm, 1 feet =12 inches).

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Description automatically generated

1. Find out the distance between two points e.g. (x1, y1) and (x2, y2).

Hint: Distance=√(x2-x1)2+ (y2-y1)2

Text

Description automatically generated

Graphical user interface, text

Description automatically generated

1. Evaluate the area of the circle Area = Pi \* R2

A screenshot of a computer

Description automatically generated

1. Interchange values of two variables using a third variable.

Text

Description automatically generated

1. Interchange values of two variables without using a third variable.

Text

Description automatically generated

**Lab 2. Control Structures: If, If-Else and Switch-Case statements**

1. Check whether the given number is odd or even.

**Text

Description automatically generated**

1. Check whether a given year is a leap year or not.

Text

Description automatically generated

Graphical user interface, text, application

Description automatically generated

1. Write a program to take two numbers as an input and find whether one number is multiple of other or not.

Text

Description automatically generated

Graphical user interface, text

Description automatically generated

1. Write a program that returns a letter grade based on a quiz score. The input will be the integer score from a ten-point quiz.
   1. The letter grades are assigned by:
   2. 9 – 10 “A” 7 – 8 “B” 5 – 6 “C” 3 – 4 “D” < 3 “F”

A screenshot of a computer

Description automatically generated

A screenshot of a computer

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Text

Description automatically generated

1. Write a program to check whether given character is vowel, consonant or digit.

Text

Description automatically generated

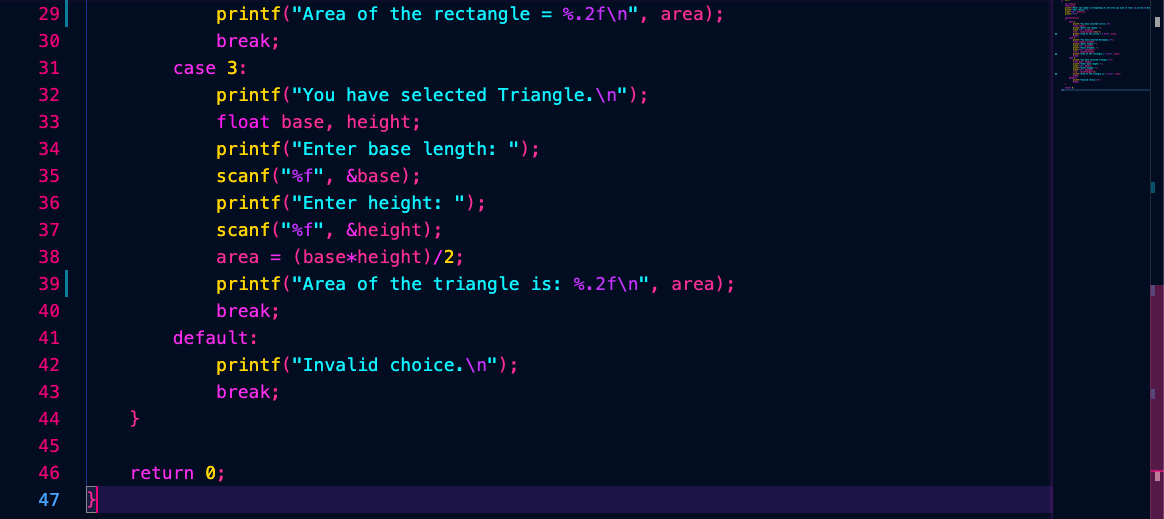
Text

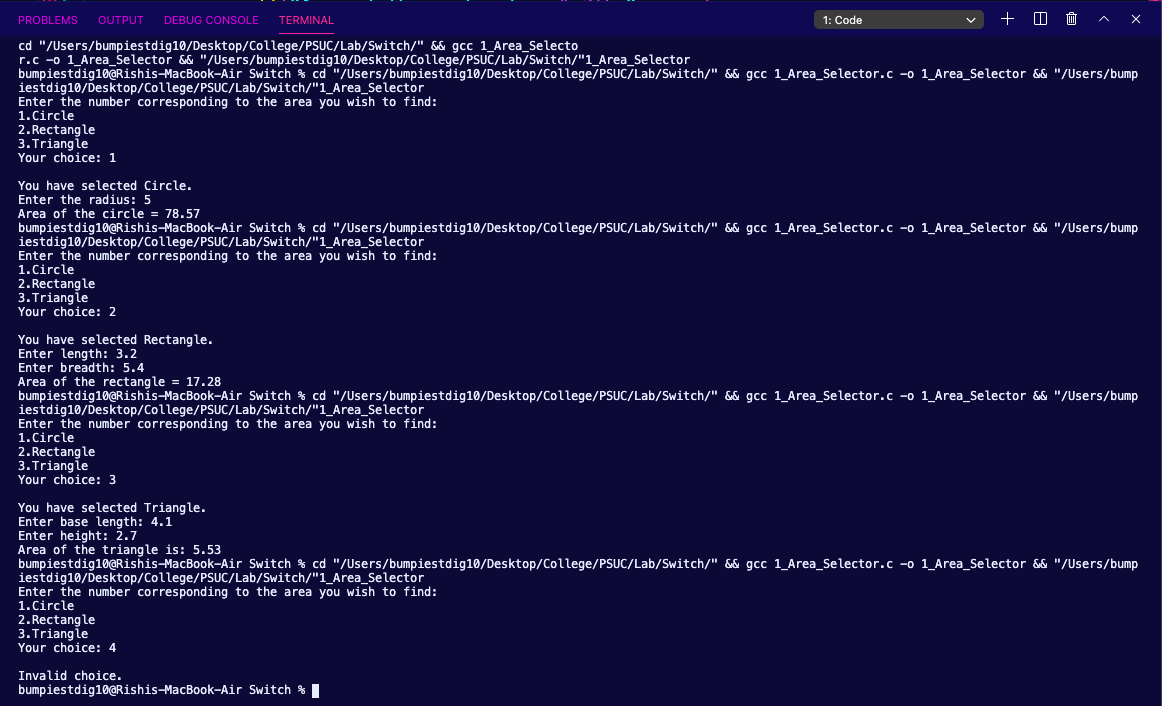
Description automatically generated

**Control Structures: Switch-Case**

1. Program to calculate an area of a circle, a rectangle or a triangle depending on user’s choice.

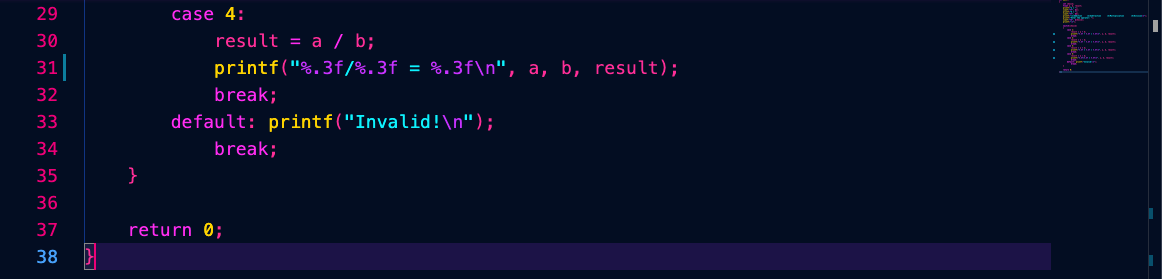


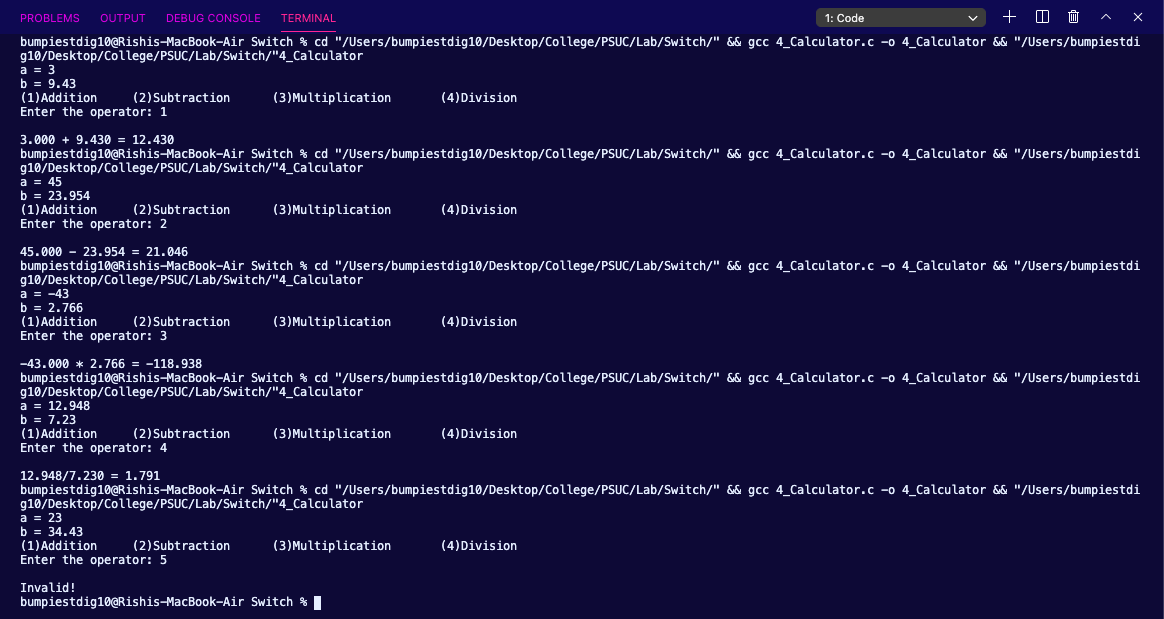




1. Write a program to design a calculator that performs addition, subtraction, minus and division operation. This program inputs two operands and an operator and then displays the calculated results.







1. Write a program to calculate a bill of internet browsing. The conditions are given below:

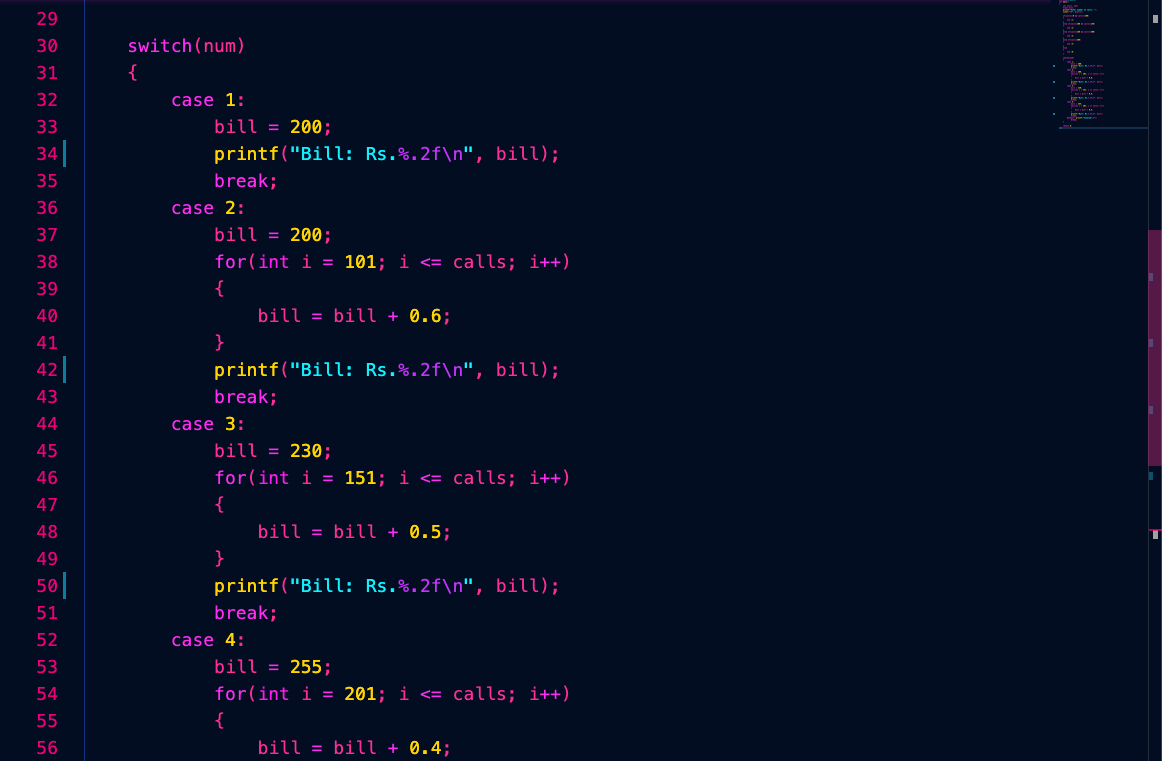
Minimum Rs. 200 for up to 100 calls

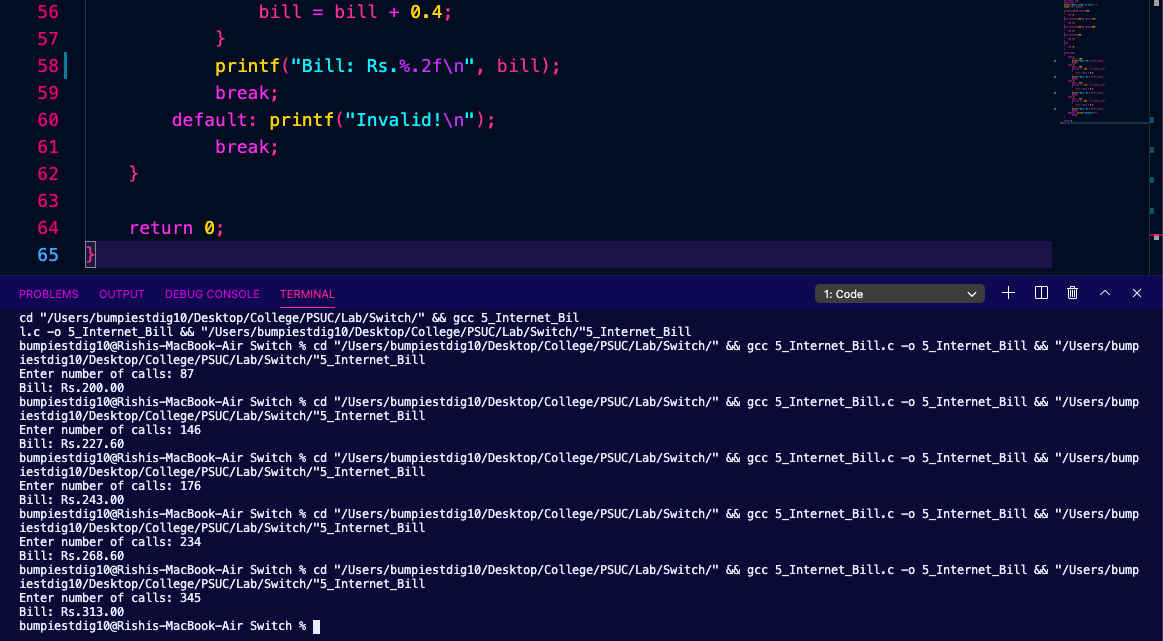
Plus, Rs. 0.60 per call for next 50 calls.

Plus, Rs. 0.50 per call for next 50 calls.

Plus, Rs. 0.40 per call for any call beyond 200 calls





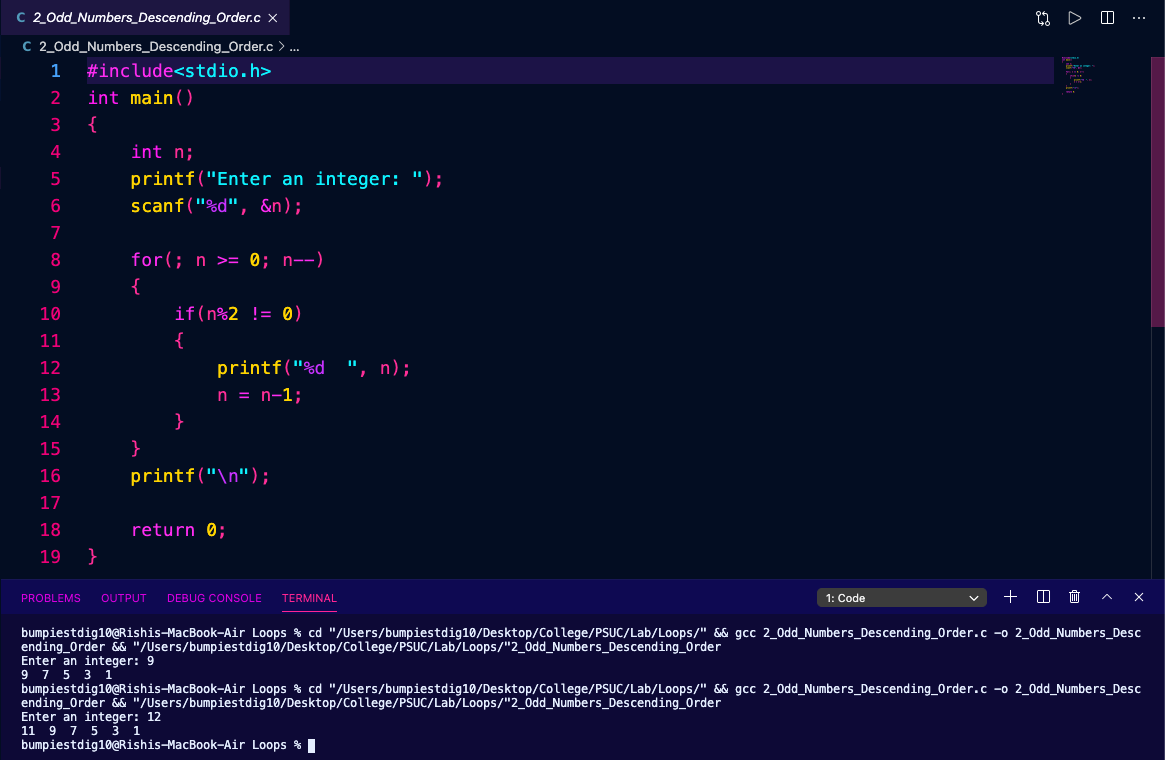


**Lab 3. Control Structures: Loops and Nested Loops**

1. Write a program to print the sum of N natural numbers.

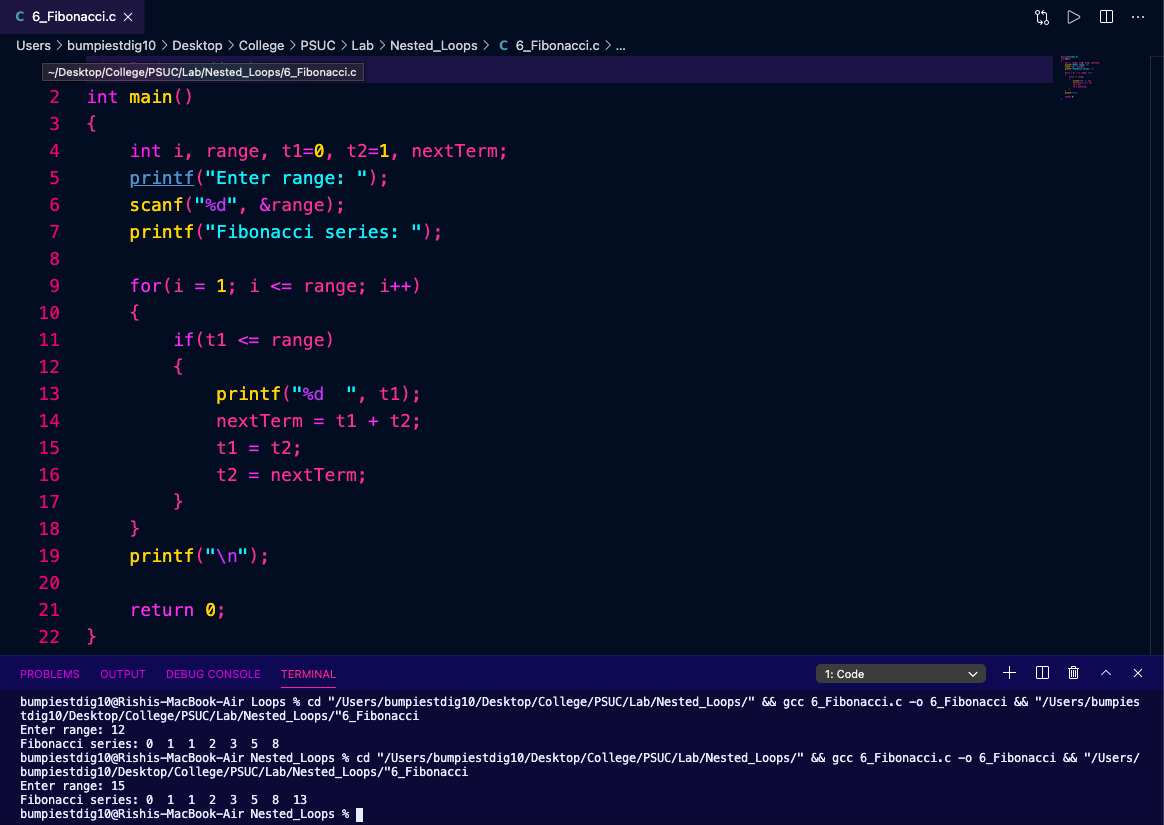
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1. Write a program to take N as input print the odd numbers in descending order.

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1. Write a program to print the Nth Fibonacci number.

Hint: (Fibonacci series is 0, 1, 1, 2, 3, 5, 8)

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1. Find whether given number is prime or not.

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**Graphical user interface, text, application

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1. Convert the decimal number into binary to decimal.

Ex: 1101 = 1\*23 + 1 \* 22 + 0 \* 21+ 1\* 20 =13

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**Graphical user interface, text

Description automatically generated**

1. Reverse a given number

Ex: 1234 reverse=4\*103 +3 \* 102 + 2 \* 101 + 1 \* 100 =4321

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1. Check whether given number is Armstrong or not. An Armstrong number of three digits is an integer such that the sum of the cubes of its digits is equal to the number itself. For example, 371 is an Armstrong number since 33 + 73 + 13 = 371.

**Text

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**Text

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1. Print the Fibonacci numbers that fall in given range.

**Text

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**Graphical user interface, text, email

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1. Print the prime numbers that fall in given range.

**Text

Description automatically generated**

**Graphical user interface, text, application

Description automatically generated**