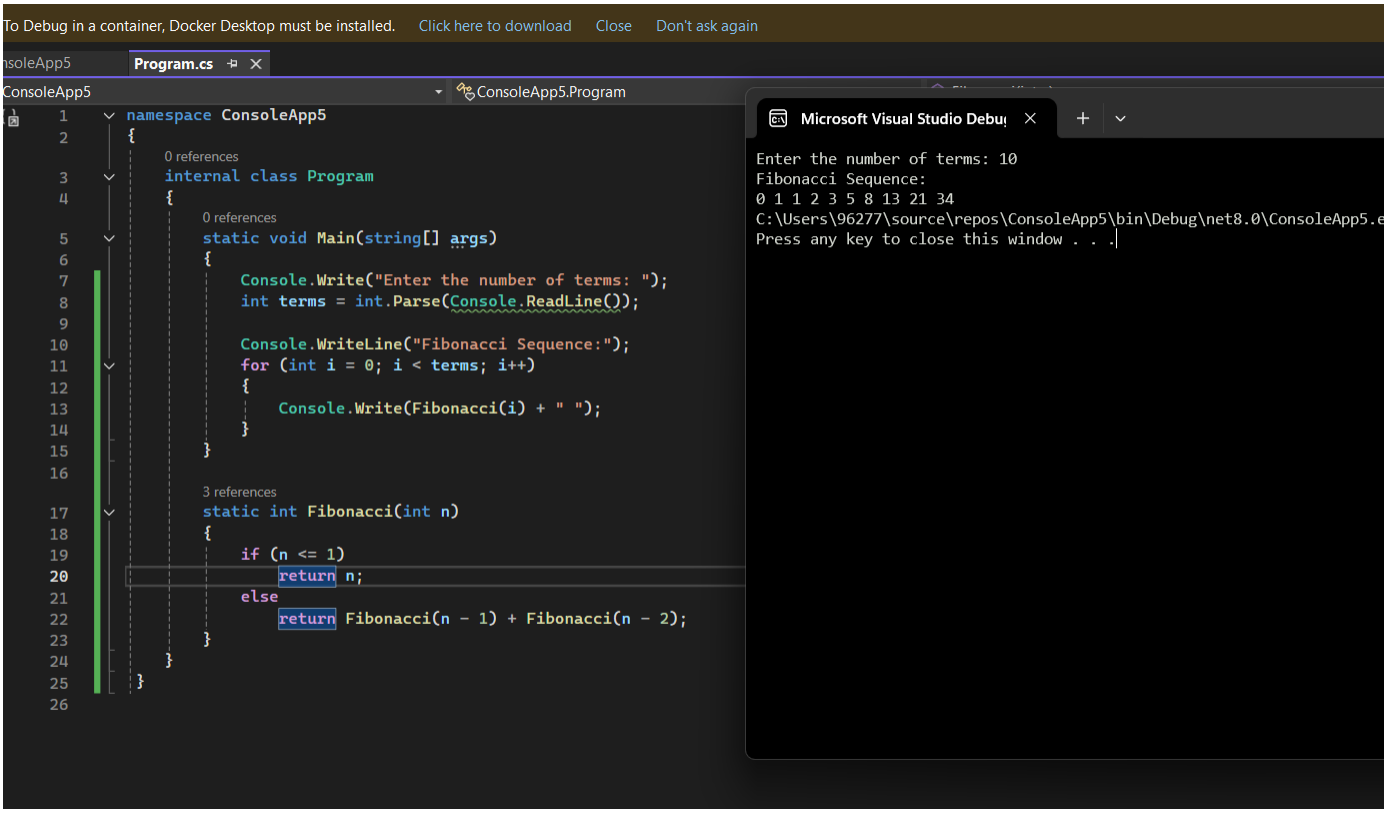
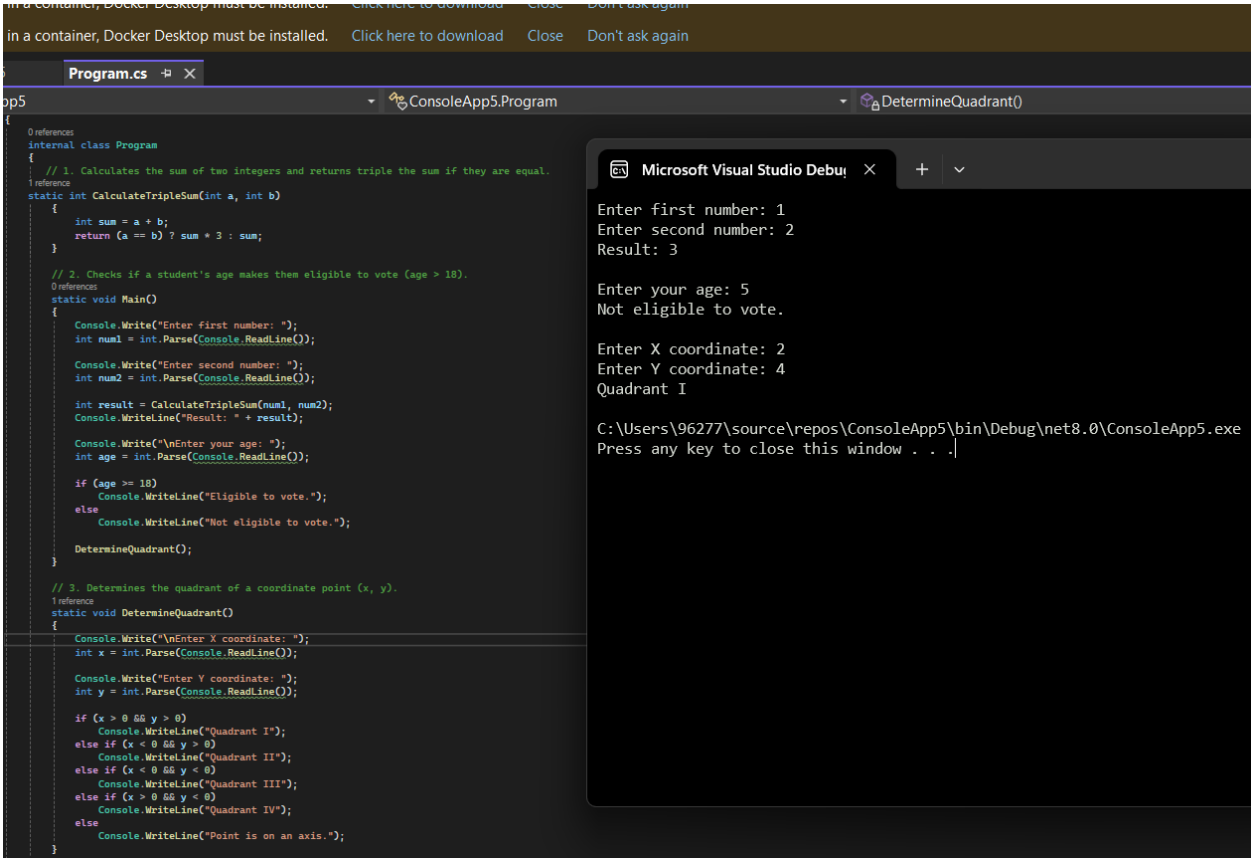
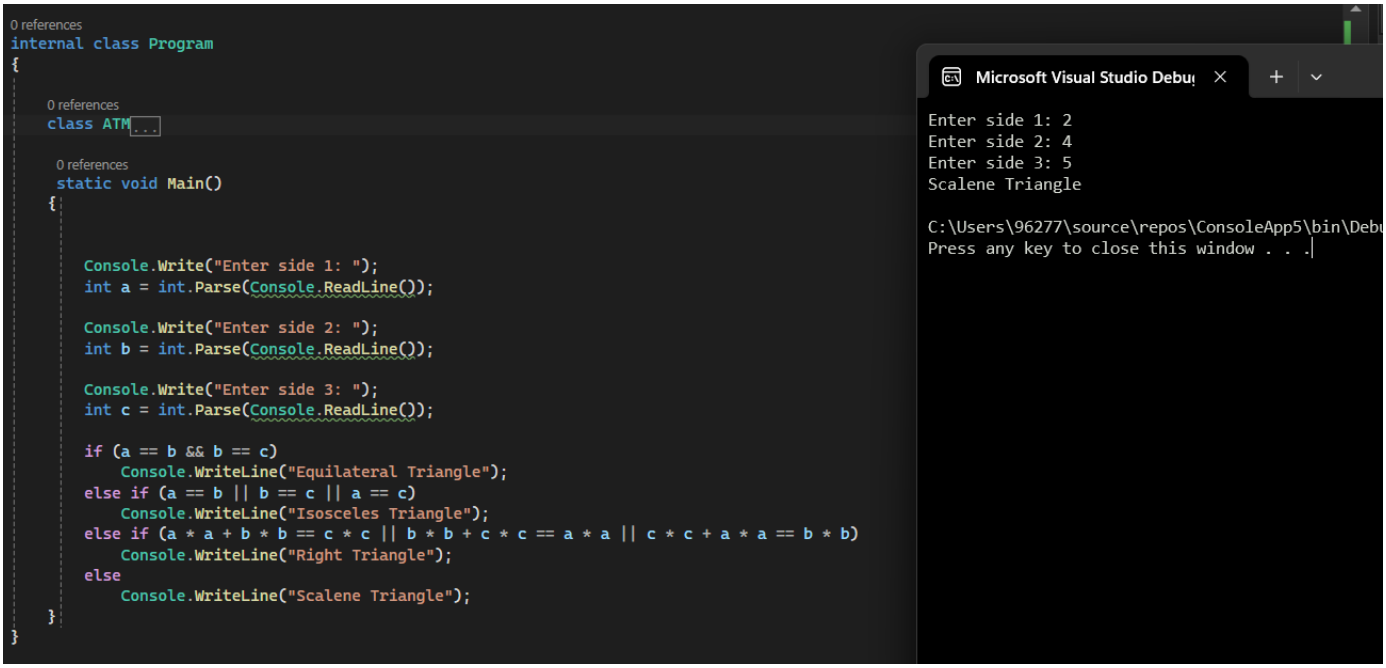
Fibonacci sequence



Exercise 1.1 & 1.2 & 1.3



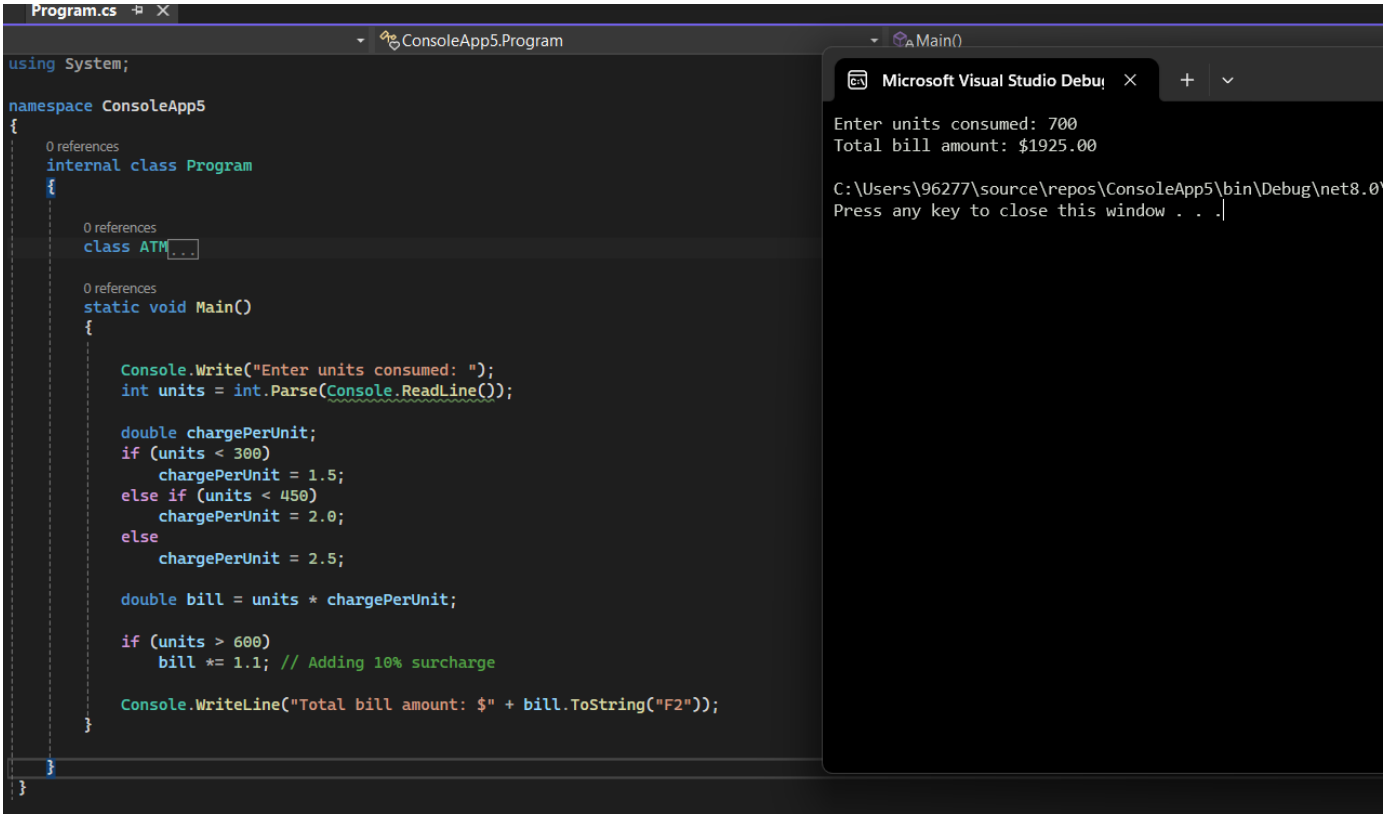
Exercise 1.4: Determine Triangle Type



```
0 references
internal class Program
{

    0 references
    class ATM...

    0 references
    static void Main()
    {


        Console.Write("Enter side 1: ");
        int a = int.Parse(Console.ReadLine());

        Console.Write("Enter side 2: ");
        int b = int.Parse(Console.ReadLine());

        Console.Write("Enter side 3: ");
        int c = int.Parse(Console.ReadLine());

        if (a == b && b == c)
            Console.WriteLine("Equilateral Triangle");
        else if (a == b || b == c || a == c)
            Console.WriteLine("Isosceles Triangle");
        else if (a * a + b * b == c * c || b * b + c * c == a * a || c * c + a * a == b * b)
            Console.WriteLine("Right Triangle");
        else
            Console.WriteLine("Scalene Triangle");
    }
}
```

```
Microsoft Visual Studio Debu
Enter side 1: 2
Enter side 2: 4
Enter side 3: 5
Scalene Triangle

C:\Users\96277\source\repos\ConsoleApp5\bin\Debu
Press any key to close this window . . .
```

Exercise 1.5: Electricity Bill Calculation



```
Program.cs
ConsoleApp5.Program
Main()
using System;

namespace ConsoleApp5
{
    0 references
    internal class Program
    {

        0 references
        class ATM...

        0 references
        static void Main()
        {

            Console.Write("Enter units consumed: ");
            int units = int.Parse(Console.ReadLine());

            double chargePerUnit;
            if (units < 300)
                chargePerUnit = 1.5;
            else if (units < 450)
                chargePerUnit = 2.0;
            else
                chargePerUnit = 2.5;

            double bill = units * chargePerUnit;

            if (units > 600)
                bill *= 1.1; // Adding 10% surcharge

            Console.WriteLine("Total bill amount: $" + bill.ToString("F2"));
        }

    }
}
```

```
Microsoft Visual Studio Debu
Enter units consumed: 700
Total bill amount: $1925.00

C:\Users\96277\source\repos\ConsoleApp5\bin\Debug\net8.0
Press any key to close this window . . .
```

Exercise 2: Simple Bank System for ATM

```
2 references
class ATM
{
    private double balance = 0;

    // Deposits a positive amount to the balance.
    1 reference
    public void Deposit(double amount)
    {
        if (amount > 0)
        {
            balance += amount;
            Console.WriteLine("Deposit successful.");
        }
        else
        {
            Console.WriteLine("Invalid amount.");
        }
    }

    // Withdraws an amount if sufficient funds are available.
    1 reference
    public void Withdraw(double amount)
    {
        if (amount > 0 && amount <= balance)
        {
            balance -= amount;
            Console.WriteLine("Withdrawal successful.");
        }
        else
        {
            Console.WriteLine("Invalid amount or insufficient funds.");
        }
    }

    // Displays the current balance.
    1 reference
    public void CheckBalance()
    {
        Console.WriteLine("Your balance is: " + balance);
    }
}
0 references
```

```
Program.cs
pp5                                   ConsoleApp5.Program
        0 references
        static void Main()
        {
            ATM atm = new ATM();
            bool exit = false;

            while (!exit)
            {
                Console.WriteLine("\n1. Deposit\n2. Withdraw\n3. Check Balance\n4. Ex
                Console.Write("Choose an option: ");
                int choice = int.Parse(Console.ReadLine());

                switch (choice)
                {
                    case 1:
                        Console.Write("Enter deposit amount: ");
                        double deposit = double.Parse(Console.ReadLine());
                        atm.Deposit(deposit);
                        break;
                    case 2:
                        Console.Write("Enter withdrawal amount: ");
                        double withdrawal = double.Parse(Console.ReadLine());
                        atm.Withdraw(withdrawal);
                        break;
                    case 3:
                        atm.CheckBalance();
                        break;
                    case 4:
                        exit = true;
                        break;
                    default:
                        Console.WriteLine("Invalid option.");
                        break;
                }
            }
        }
    }
```

```
Microsoft Visual Studio Debu
2. Withdraw
3. Check Balance
4. Exit
Choose an option: 1
Enter deposit amount: 2
Deposit successful.

1. Deposit
2. Withdraw
3. Check Balance
4. Exit
Choose an option: 2
Enter withdrawal amount: 1
Withdrawal successful.

1. Deposit
2. Withdraw
3. Check Balance
4. Exit
Choose an option: 3
Your balance is: 1

1. Deposit
2. Withdraw
3. Check Balance
4. Exit
Choose an option: 4

C:\Users\96277\source\repos\ConsoleApp5\bin\De
Press any key to close this window . . .
```

Exercise 3: Student Grades Analysis

```
{
    0 references
    class ATM...
    0 references
    static void Main()
    {
        Console.Write("Enter the number of students: ");
        int numStudents = int.Parse(Console.ReadLine());

        List<int> grades = new List<int>();

        for (int i = 0; i < numStudents; i++)
        {
            Console.Write($"Enter grade for student {i + 1}: ");
            grades.Add(int.Parse(Console.ReadLine()));
        }

        int minGrade = grades.Min();
        int maxGrade = grades.Max();
        double avgGrade = grades.Average();
        int aboveAverage = grades.Count(g => g > avgGrade);
        int belowAverage = grades.Count(g => g < avgGrade);

        Console.WriteLine($"Minimum Grade: {minGrade}");
        Console.WriteLine($"Maximum Grade: {maxGrade}");
        Console.WriteLine($"Average Grade: {avgGrade:F2}");
        Console.WriteLine($"Students above average: {aboveAverage}");
        Console.WriteLine($"Students below average: {belowAverage}");
    }
}
```

```
Microsoft Visual Studio Debu
Enter the number of students: 3
Enter grade for student 1: 90
Enter grade for student 2: 80
Enter grade for student 3: 70
Minimum Grade: 70
Maximum Grade: 90
Average Grade: 80.00
Students above average: 1
Students below average: 1

C:\Users\96277\source\repos\ConsoleApp5\bin\Debug\ne
Press any key to close this window . . .
```