Visual Programming Project

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Section: M3

Course: Visual Programming

Class: BS CS (Morning)

Project Title: Shape and Area Calculator

This project is a basic Shape and Area Calculator developed using C# in the Visual Programming environment. It allows the user to calculate the area of either a rectangle or a circle based on user input. This application demonstrates the use of conditionals, mathematical functions, and user input handling in C#.

Shapes used:

- Rectangle
- Circle

Key Features:

- Shape Selection: Users can select a shape by choosing the alphabet either "r" for rectangle and any other alphabet for circle
- Area :User can calculate the area of rectangle by providing the length and width of the rectangle and for the circle user should provide the radius
- Dynamic Input Fields: Depending on the selected shape, relevant input fields (like radius, height, etc.) are displayed.
- Real-time Calculation: On clicking the "Calculate" button, the application instantly computes and displays the area of the selected shape.
- Exit Option: Lets the user close the application safely.

Technologies Used:

- Language: C#
- Framework: .NET Framework (Windows Forms)
- IDE: Visual Studio

What I learned:

- Basics of C# programming
- Using variables, functions and math formulas
- Handling user input and displaying results

Basics of C# programming

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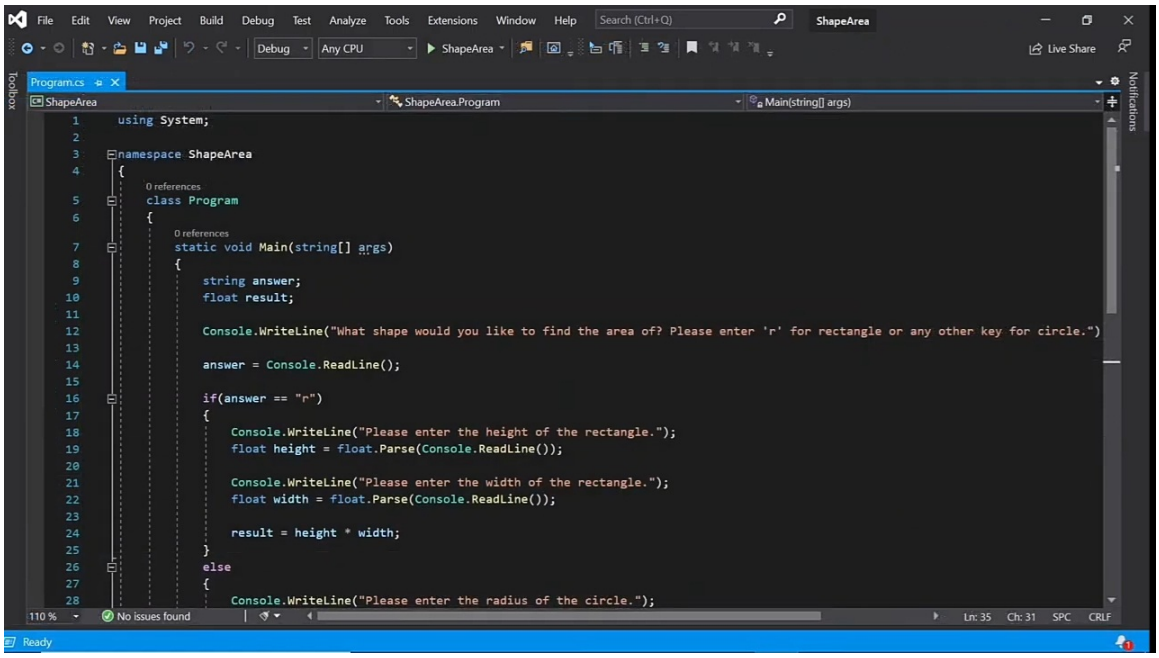


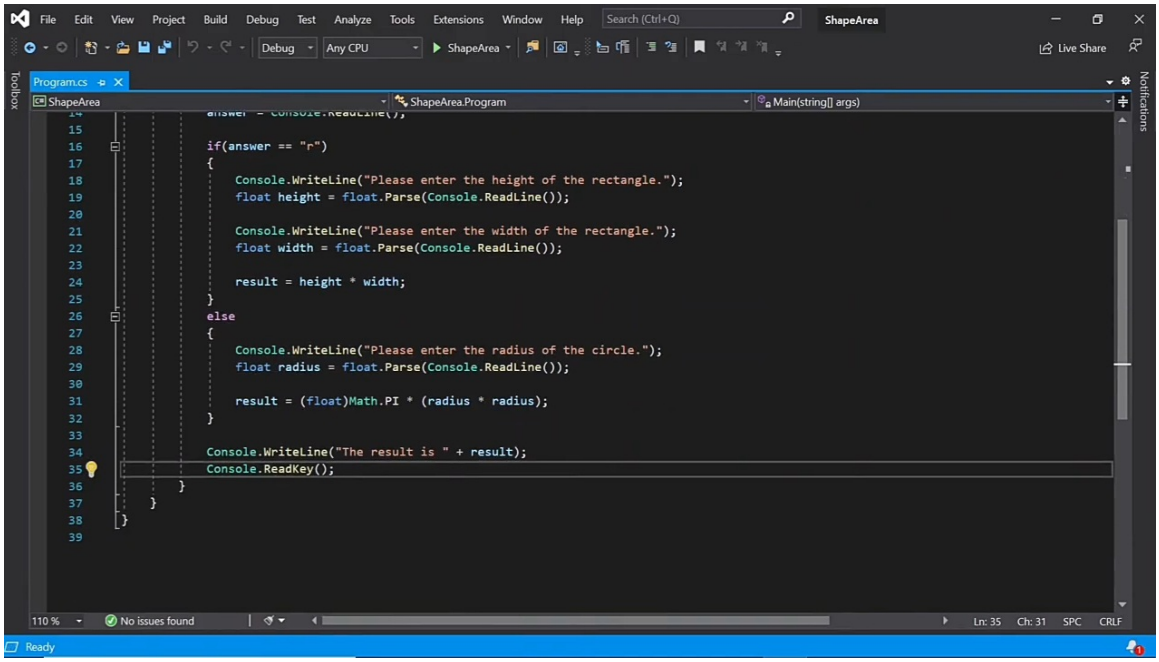
This section of the code initializes the program and prompts the user to select the shape (rectangle or circle). It then takes the necessary input based on the shape selected and calculates the area accordingly.

1. **Main Method**:
    - It declares two variables:
        - answer (string): To store user input for shape selection.
        - result (float): To store the calculated area.
2. **User Input Handling**:
    - The input is read using Console.ReadLine() and stored in answer

3 **.Conditional Logic:**

- The user is asked to input the height and width of the rectangle, which are parsed into float values.
- The area is calculated by the multiplication of height and width

4. **Circle Calculation:**
    - It is present in else block
    - The user is prompted to enter the radius of the circle
    - Then the radius and pi values are multiplied to find the area



Here, the program continues from the previous logic and performs the calculation of the area. For rectangles, it multiplies height by width. For circles, it uses the formula πr^2. The result is then displayed to the user.

1. **Rectangle Calculation:**
   - It is present in the if statement
   - The user is prompted to enter the values of height and width and parsed into the float variable
2. **Circle Calculation**:
   - The user is prompted to give the values of the radius
   - The radius is parsed into float variable
   - The area is calculated and stores in the result variable
3. **Output**:
   - The result is displayed in **Console.WriteLine("The result is" + result)**
   - **Console.ReadKey()**pauses the program to allow the user to view the output before exiting