Programming in C# ~ Assignment 1

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Exercise 1:
Calculate the monthly income of an employee

Algorithm

1.) Create a variable called hoursWorked.

2.) Create a variable called payperHour.

3.) Create a variable called totalPay.

4.) Get the total number of hours an employee has worked in a month from the user.

5.) Assign the total number of hours to the hoursWorked variable.

6.) Get the dollar amount per hour that the employee is paid from the user.

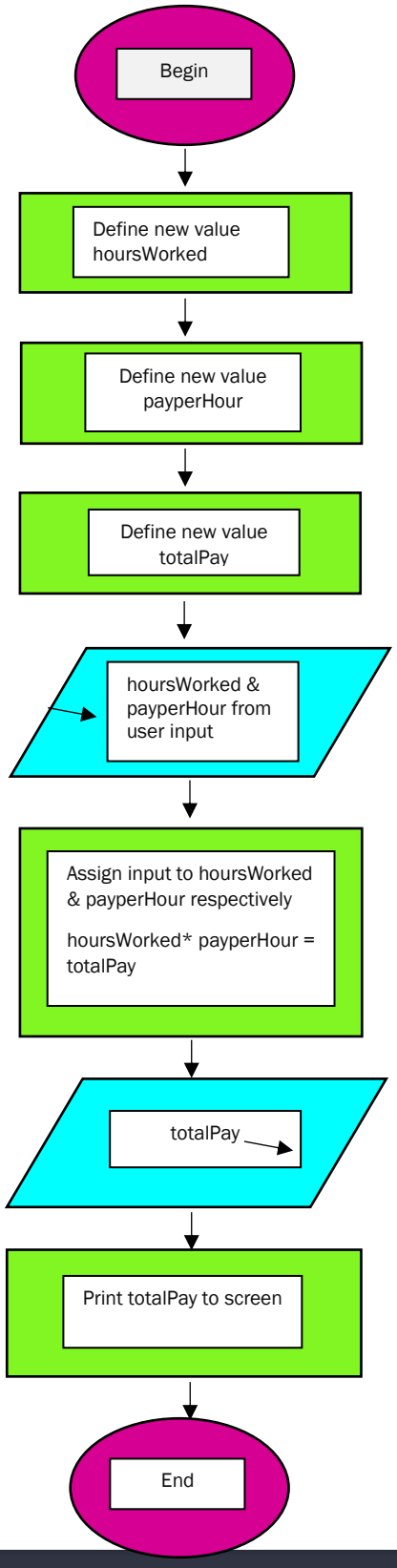
7.) Assign the dollar amount per hour to the payperHour variable.

8.) Create a variable called totalPay.

9.) Multiply the hoursWorked by the payperHour variable.

10.) Assign the result of the hoursWorked * payperHour to the totalPay variable.

11.) Print the totalPay variable to the screen



Pseudocode

Start

Declare variables

Float hoursWorked

Float payperHour

Float totalPay

Print “Enter the hours worked:”

Read input and assign to hoursWorked

Print "Enter the pay per hour:”

Read input and assign to payperHour

hoursWorked * payperHour = totalPay

Print totalPay to screen

End

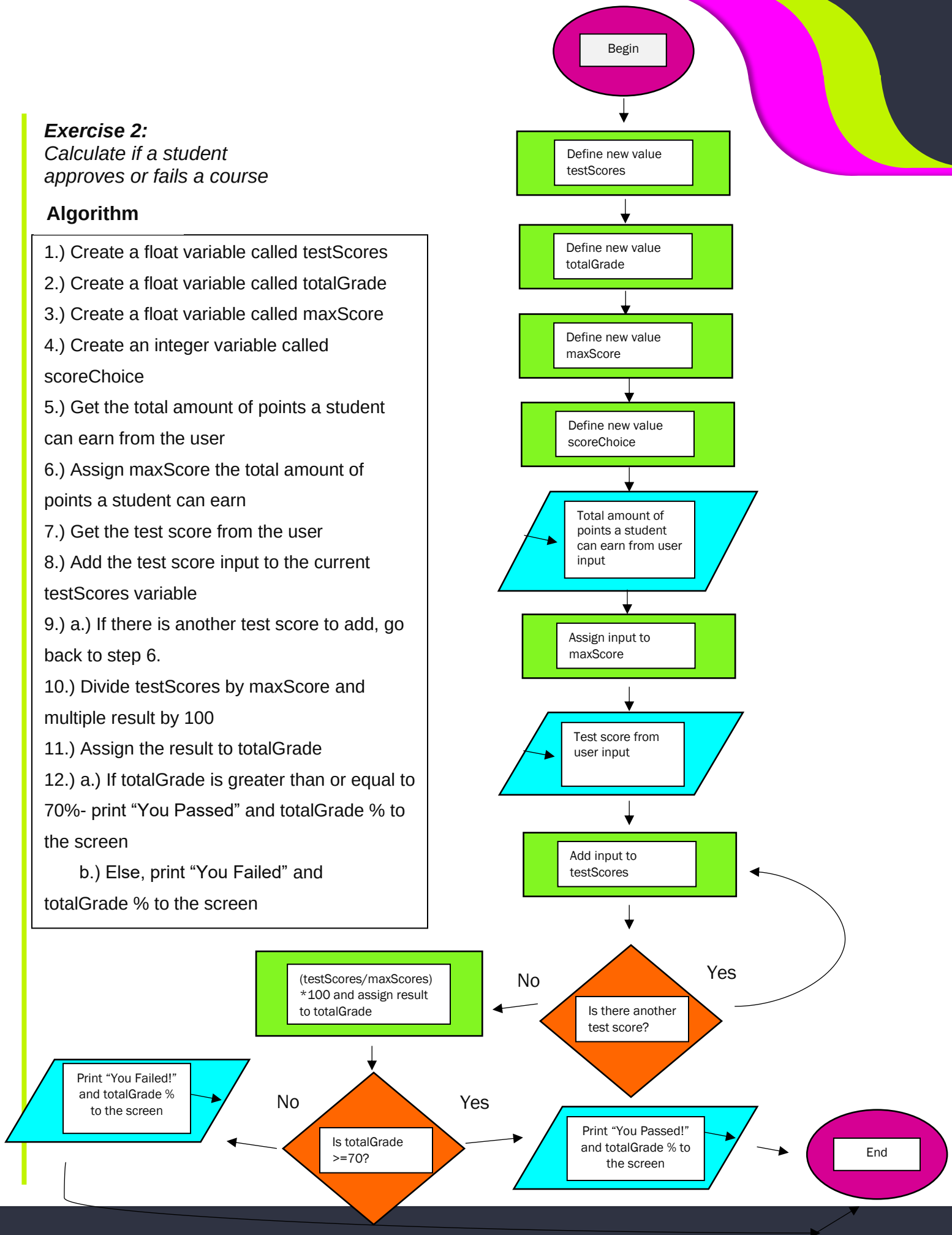
C# Code

```
case 1:
    float hoursWorked;
    float payperHour;
    float totalPay;

    Console.WriteLine("Enter the hours worked: ");
    hoursWorked = float.Parse(Console.ReadLine());

    Console.WriteLine("Enter the pay per hour: ");
    payperHour = float.Parse(Console.ReadLine());

    totalPay = payperHour * hoursWorked;

    Console.WriteLine(totalPay);
    break;
```

Exercise 2:
Calculate if a student approves or fails a course

Algorithm

1.) Create a float variable called testScores
2.) Create a float variable called totalGrade
3.) Create a float variable called maxScore
4.) Create an integer variable called scoreChoice
5.) Get the total amount of points a student can earn from the user
6.) Assign maxScore the total amount of points a student can earn
7.) Get the test score from the user
8.) Add the test score input to the current testScores variable
9.) a.) If there is another test score to add, go back to step 6.
10.) Divide testScores by maxScore and multiple result by 100
11.) Assign the result to totalGrade
12.) a.) If totalGrade is greater than or equal to 70%- print “You Passed” and totalGrade % to the screen
b.) Else, print “You Failed” and totalGrade % to the screen



Pseudocode

```
Start
    Declare variables
      Float testScores
      Float totalGrade
      Float maxScore
      Integer scoreChoice
      Print to screen“Enter the total amount of grade points that can be earned:”
      Read input and assign to maxScore
      Print to screen "Enter the student’s 1st test score:”
      Read input and add to testScores total
      Print to screen “Would you like to enter another score?”
      Print to screen “Enter 1 for yes and 2 for no”
      Read input and assign to scoreChoice
      If 1 is selected, Print "Enter the next test score:”
            Read input and add to testScores total
            Print “Would you like to enter another score? Enter 1 for yes and 2 for
          no”- continue asking until choice 2 is selected
       Calculate 100 * (testScores/maxScores) = totalGrade
       If totalGrade >= 70, Print “You Passed!” and totalGrade % to the screen
       Else, Print “You Failed!” and totalGrade % to the screen
End
```

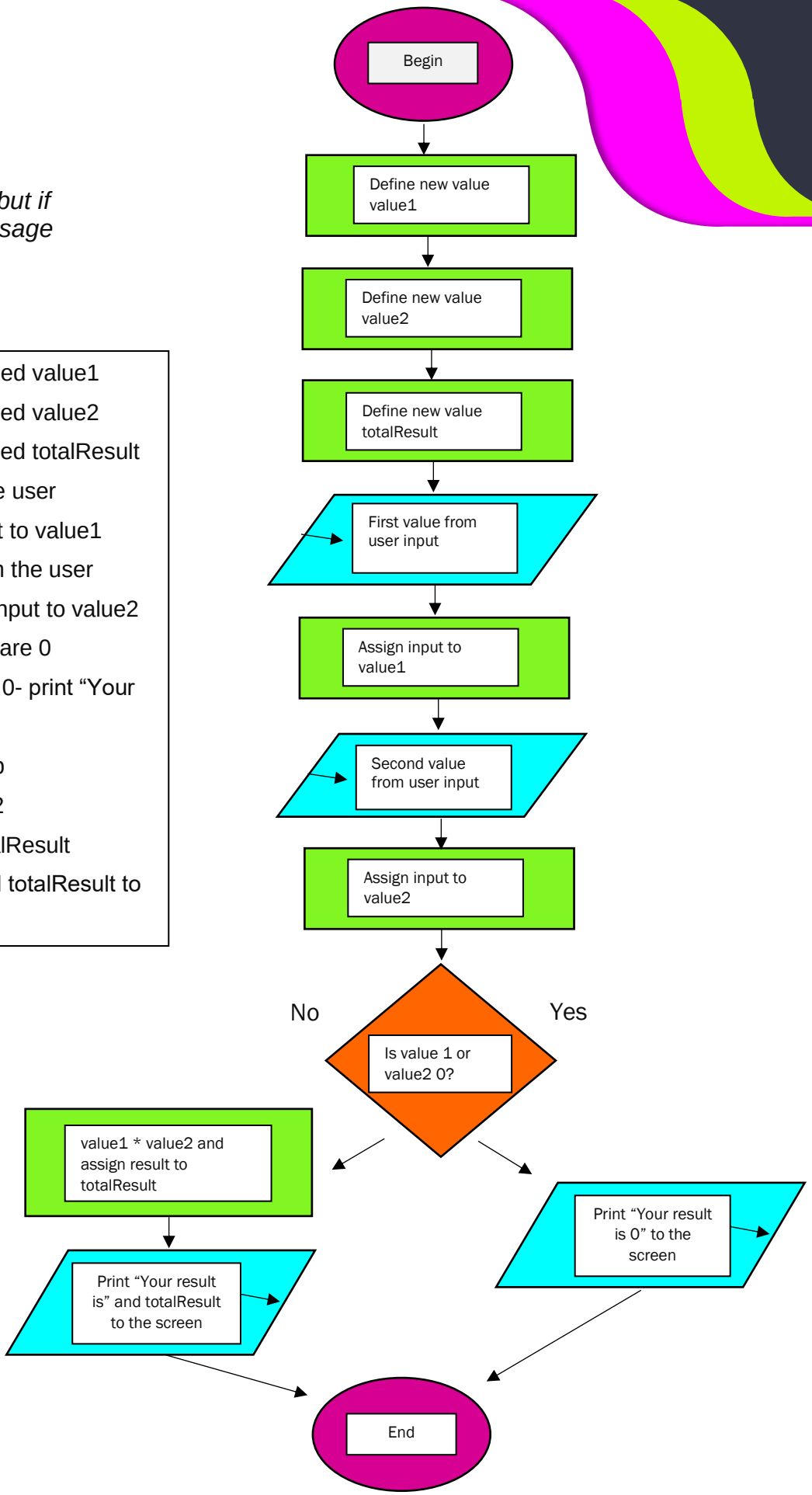
C# Code

```
case 2:
    Console.WriteLine("You are running program {0}", option);

    float testScores=0.0f;
    float totalGrade=0.0f;
    float maxScore=0.0f;
    int scoreChoice=0;

    Console.WriteLine("Enter the total amount of grade points that can be earned");
    maxScore = float.Parse(Console.ReadLine());

    Console.WriteLine("Enter the student's 1st test score: ");
    testScores =+ float.Parse(Console.ReadLine());

    Console.WriteLine("Would you like to enter another score?");
    Console.WriteLine("Press 1 for yes or 2 for no");
    scoreChoice = Int32.Parse(Console.ReadLine());
        if (scoreChoice == 1)
        {
            while (scoreChoice != 2)
            {
                Console.WriteLine("Enter next test score: ");
                testScores = testScores + float.Parse(Console.ReadLine());
                Console.WriteLine("Would you like to enter another score?");
                Console.WriteLine("Press 1 for yes or 2 for no");
                scoreChoice = Int32.Parse(Console.ReadLine());
            };
        };

    totalGrade = 100 * (testScores / maxScore);

        if(totalGrade >= 70)
        {
            Console.WriteLine("You Passed!{0}%", totalGrade);
        }
        else
        {
            Console.WriteLine("You Failed! {0}%", totalGrade);
        };
    break;
```

Exercise 3:
Multiplication of 2 values, but if any value is 0 send a message that the result is 0.

Algorithm

1.) Create a float variable called value1
2.) Create a float variable called value2
3.) Create a float variable called totalResult
4.) Get the first value from the user
5.) Assign the first value input to value1
6.) Get the second value from the user
7.) Assign the second value input to value2
8.) Check if value1 or value2 are 0
9.) a.) If value1 or value2 are 0- print “Your result is 0” to the screen
b.) Else, continue to next step
10.) Multiply value1 by value2
111.) Assign the result to totalResult
12.) Print “Your result is “ and totalResult to the screen



Pseudocode

```
Start
    Declare variables
        Float value1
        Float value2
        Float totalResult
        Print to screen “Enter the first value to be multiplied: ”
        Read input and assign to value1
        Print to screen "Enter the second value to be multiplied: ”
        Read input and assign to value2
        If 1 value1 or value 2 is 0, Print "Your result is 0” to the screen
        Else, Calculate value1 * value2 = totalResult
                Print “Your result is “ and totalResult to the screen
End
```

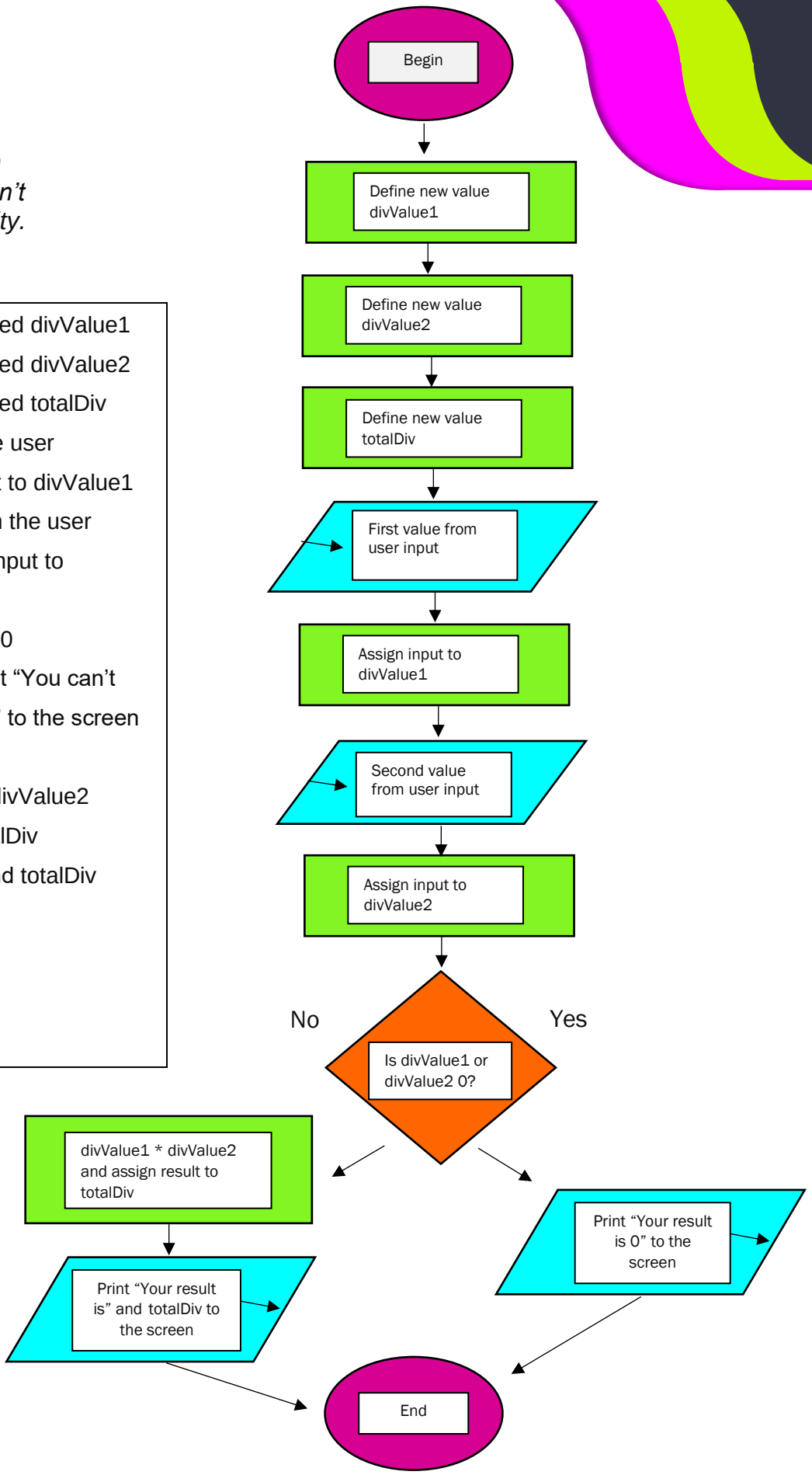
C# Code

```
case 3:
    Console.WriteLine("You are running program {0}", option);

    float value1;
    float value2;
    float totalResult;

    Console.WriteLine("Enter the first value to be multiplied: ");
    value1 = float.Parse(Console.ReadLine());
    Console.WriteLine("Enter the second value to be multiplied: ");
    value2 = float.Parse(Console.ReadLine());

        if((int)value1 == 0 || (int)value2 == 0)
        {
            Console.WriteLine("Your result is 0");
        }
        else
        {
            totalResult = value1 * value2;
            Console.WriteLine("Your result is {0}", totalResult);
        };
    break;
```

Exercise 4:
Division but if 2nd value is 0 then send message you can't divide by 0 or result is infinity.

Algorithm

1.) Create a float variable called divValue1
2.) Create a float variable called divValue2
3.) Create a float variable called totalDiv
4.) Get the first value from the user
5.) Assign the first value input to divValue1
6.) Get the second value from the user
7.) Assign the second value input to divValue2
8.) Check if divisionValue2 is 0
9.) a.) If divValue2 is a 0- print "You can't divide by 0 or result is infinity" to the screen
b.) Else,
b.) Divide divisionValue1 by divValue2
b.)1.) Assign the result to totalDiv
b.)2.) Print "Your result is " and totalDiv result to the screen



Pseudocode

Start

Declare variables

Float divValue1

Float divValue2

Float totalDiv

Print to screen “Enter the first value to be divided: ”

Read input and assign to divValue1

Print to screen "Enter the second value to be divided: ”

Read input and assign to divValue2

If value2 is 0, Print "You can’t divide by 0 or result is infinity” to the screen

Else, Calculate divValue1/ divValue2 = totalDiv

Print “Your result is “ and totalDiv t to the screen

End

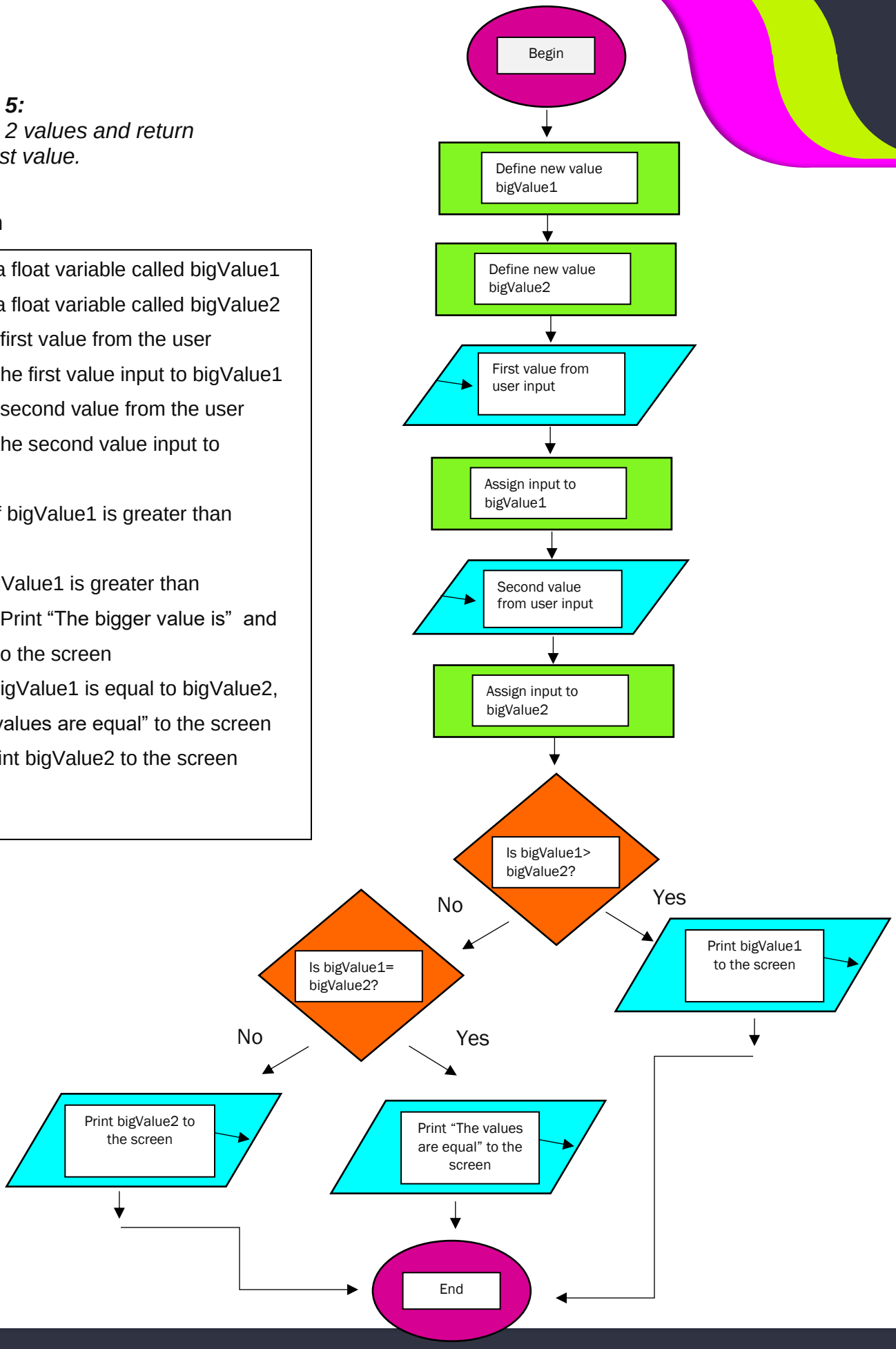
C# Code

```
case 4:
    Console.WriteLine("You are running program {0}", option);

    float divValue1;
    float divValue2;
    float totalDiv;

    Console.WriteLine("Enter the first value to be divided: ");
    divValue1 = float.Parse(Console.ReadLine());

    Console.WriteLine("Enter the second value to be divided: ");
    divValue2 = float.Parse(Console.ReadLine());

        if ((int)divValue2 == 0)
        {
            Console.WriteLine("You can't divide by 0 or result is infinity");
        }
        else
        {
            totalDiv = divValue1 / divValue2;
            Console.WriteLine("Your result is {0}", totalDiv);
        };
    break;
```

Exercise 5:
Compare 2 values and return the biggest value.

Algorithm

1.) Create a float variable called bigValue1
2.) Create a float variable called bigValue2
3.) Get the first value from the user
4.) Assign the first value input to bigValue1
5.) Get the second value from the user
6.) Assign the second value input to bigValue2
7.) Check if bigValue1 is greater than bigValue2
8.) a.) If bigValue1 is greater than bigValue2, Print “The bigger value is” and bigValue1 to the screen
b.) Else if bigValue1 is equal to bigValue2, Print “The values are equal” to the screen
c.) Else, Print bigValue2 to the screen



Pseudocode

Start

Declare variables

Float bigValue1

Float bigValue2

Print to screen “Enter the first value to be compared: ”

Read input and assign to bigValue1

Print to screen "Enter the second value to be compared: ”

Read input and assign to bigValue2

If bigValue1 is greater than bigValue2, Print “The bigger value is“ and value1 to the screen

Else if, bigValue1 is equal to bigValue2, Print “the values are equal” to the screen

Else, Print “The bigger value is“ and bigValue2 to the screen

C# Code

```
case 5:
    Console.WriteLine("You are running program {0}", option);
    float bigValue1;
    float bigValue2;

    Console.WriteLine("Enter the first value to be compared: ");
    bigValue1 = float.Parse(Console.ReadLine());

    Console.WriteLine("Enter the second value to be compared: ");
    bigValue2 = float.Parse(Console.ReadLine());

        if( bigValue1 > bigValue2)
        {
            Console.WriteLine("The bigger value is {0}", bigValue1);
        }
        else if (bigValue1 == bigValue2)
        {
            Console.WriteLine("The values are equal");
        }
        else
        {
            Console.WriteLine("The bigger value is {0}", bigValue2);
        };
    break;
```

Exercise 6:
Determine if a number is odd or even.

Algorithm

1.) Create an integer variable called num1

3.) Create an integer variable called result

4.) Get the first value from the user

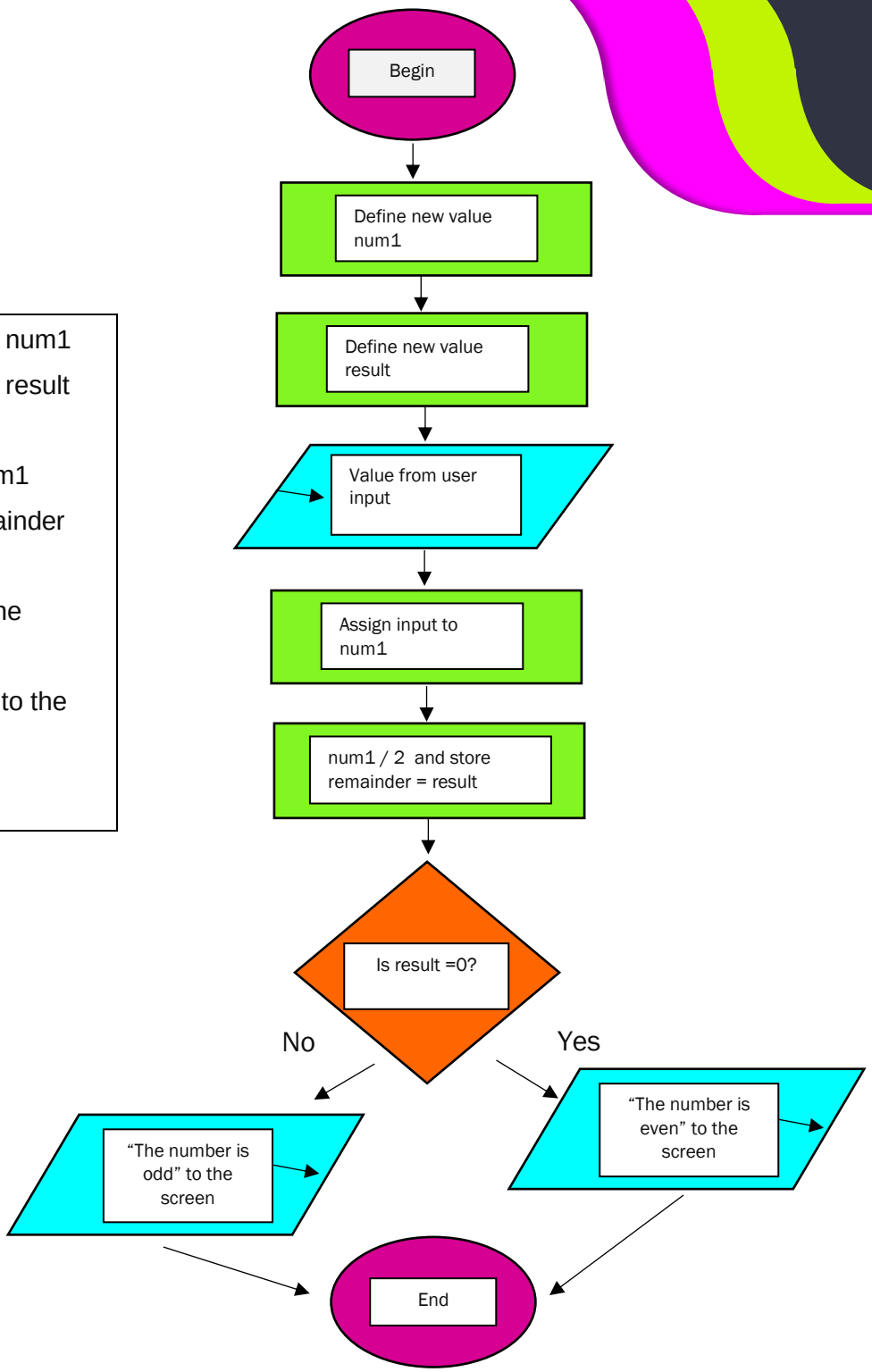
5.) Assign the first value input to num1

6.) Divide num1 by 2 and store remainder

7.) Assign the remainder to result

9.) a.) If result is equal to 0- print “The number is even” to the screen,

b.) Else, Print “Your number is odd” to the screen



Pseudocode

Start

Declare variables

Integer num1

Integer result

Print to screen “Enter the value to find out if it is even or odd ”

Read input and assign to num1

Calculate num1/ 2 and store the remainder in result

If result is equal to 0, Print “The number is even” to the screen

Else, Print “The number is odd” to the screen

C# Code

```
case 6:
    Console.WriteLine("You are running program {0}", option);

    int num1;
    int result;

    Console.WriteLine("Enter the value to find out if it is even or odd");
    num1 = Int32.Parse(Console.ReadLine());

    result = num1 % 2;
    Console.WriteLine("remainder is {0}", result);

        if(result ==0)
        {
            Console.WriteLine("The value is even");
        }
        else
        {
            Console.WriteLine("The value is odd");
        };
    break;
```