

Name: \_\_\_\_\_ Date: \_\_\_/\_\_\_/\_\_\_ Period: \_\_\_\_

Objective: The student will be able to write a program to solve system problem using methods of iteration.

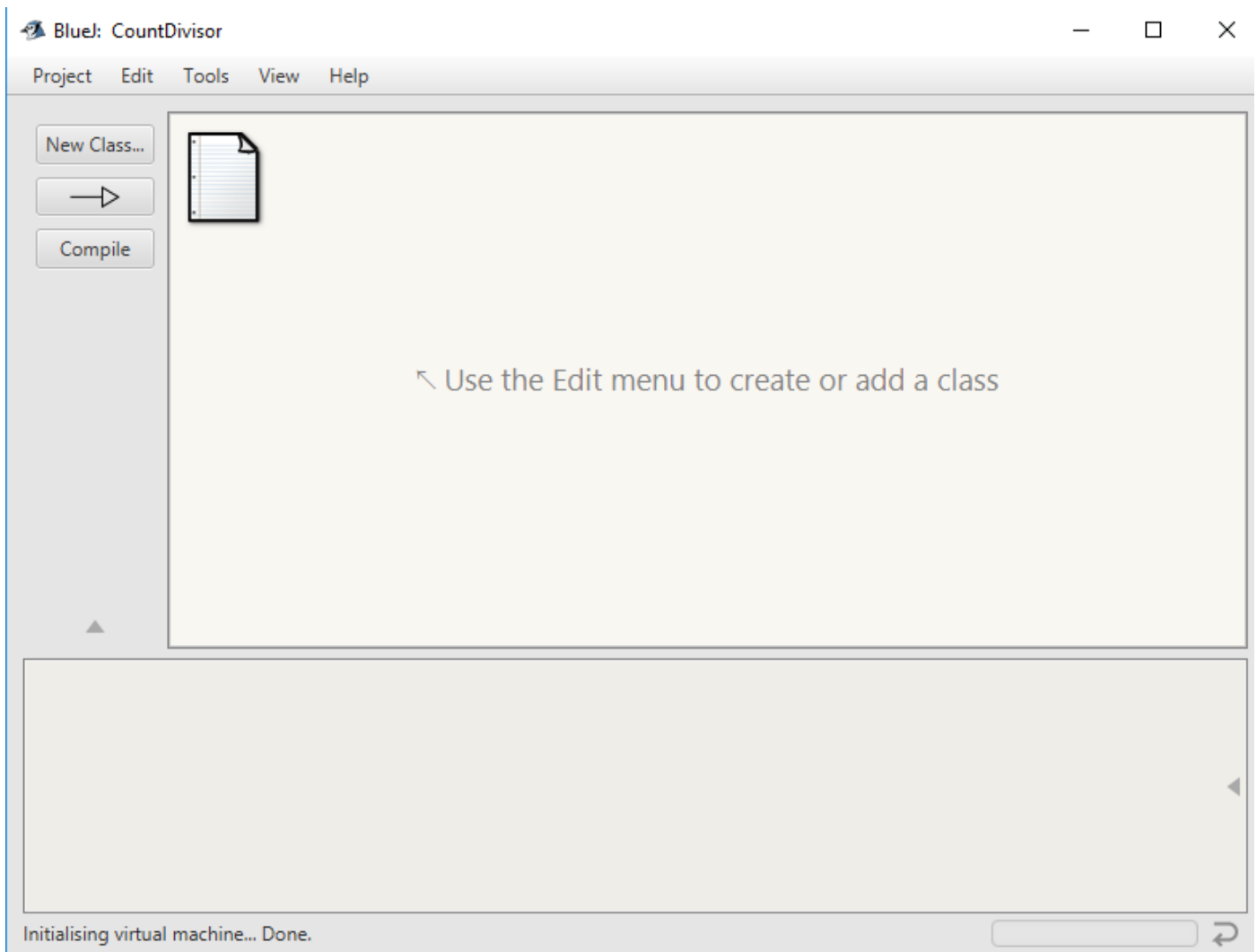
Directions: Perform the following steps.

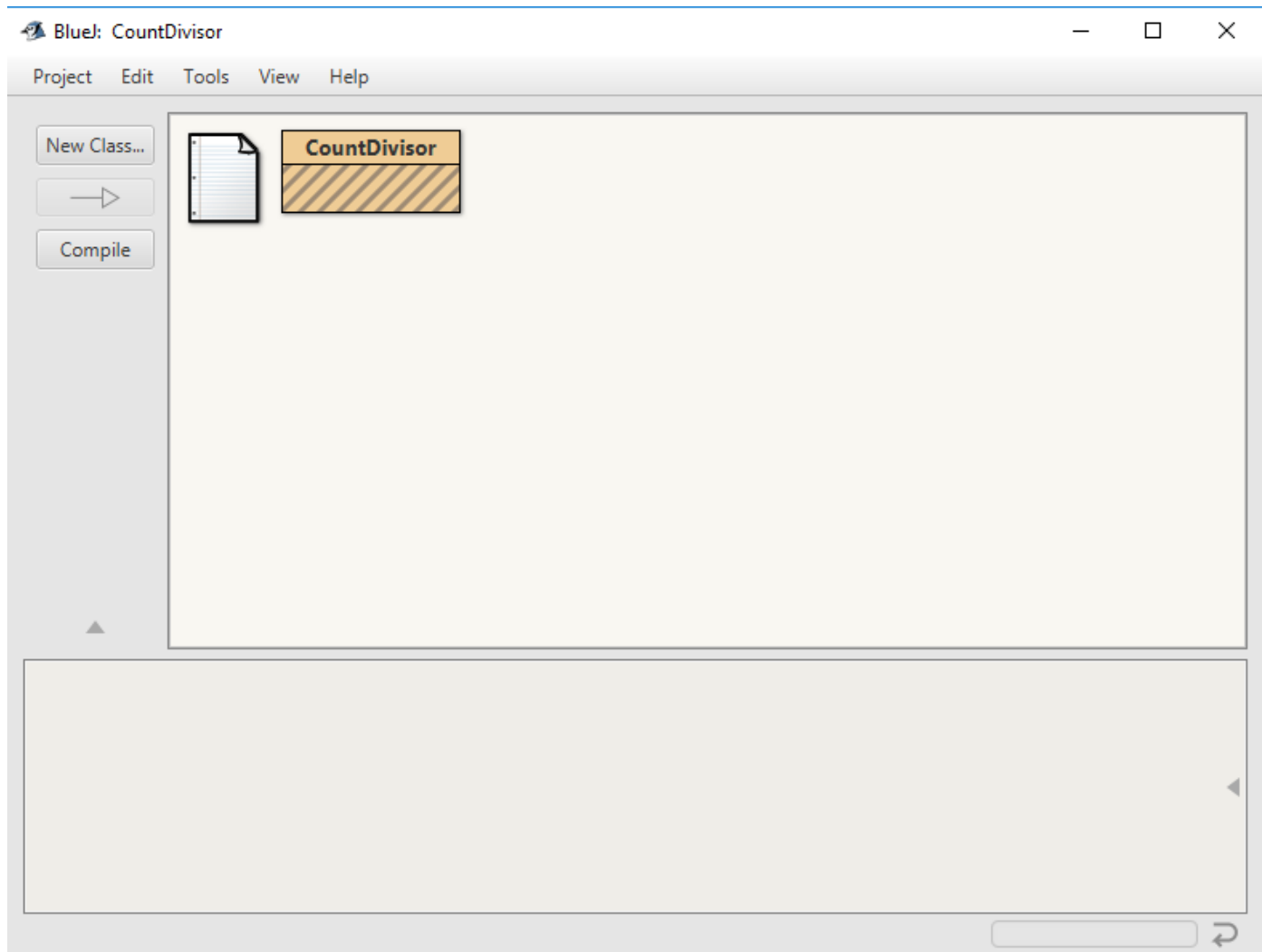
Step 1: Start BlueJ.

Step 2: Click on New Project.

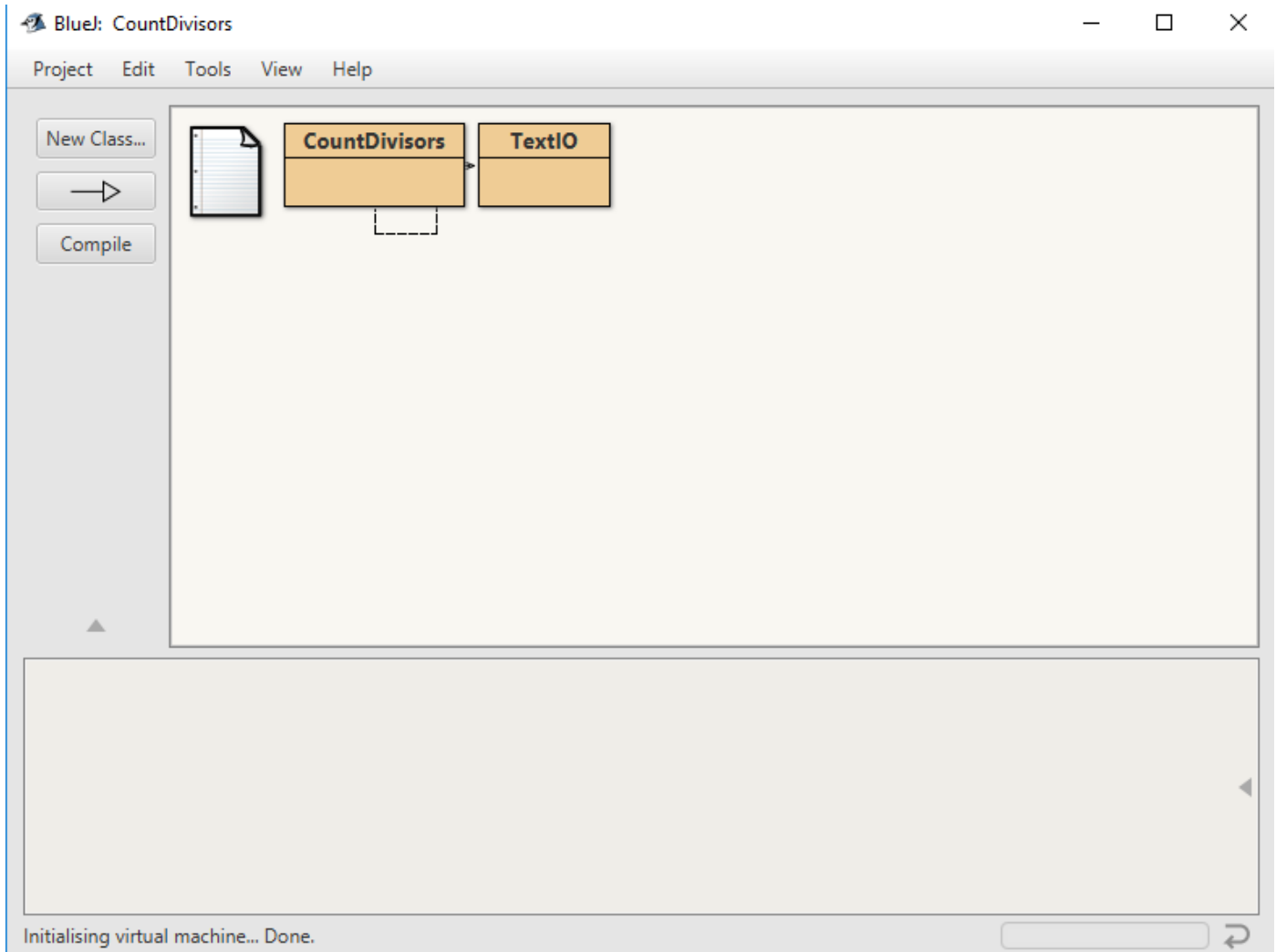
Step 3: Enter a Project Name. In this case CountDivisors. The project name and the class name will be the same so the first letter should be a capital letter.

Step 4: Click on New Class and enter CountDivisors.





Step 5: Add TextIO class to your project.



Step 6: Press Control-A to select all text in the editor screen. Press the Backspace key to remove this text.

Step7: Enter the program code shown. When declaring public class CalculateInterest do not press the backspace key after entering the closing brace “}”, this will lock the editor. Once you put in the closing brace and hit the enter key you can go back and edit any errors without any problems. (It is a program bug with BlueJ).

```
// Program to read a positive integer from the user and
// count how many divisors that the number has, and
// then it prints the result.
// Mr. Ellsworth Period: 0 November 29, 2017
public class CountDivisors
{
    public static void main(String[] args)
```

```
{
    long N;          // a positive integer entered by the user
    long testDivisor; // a number between 1 and N that is a possible
                    // divisor of N
    long divisorCount; // number of divisors of N that has been found
    long numberTested; // count of how many possible divisor of N
    int count = 0;    // counter for number of items to print
    // Get a positive integer from the user
    while(true)
    {
        System.out.print("Enter a positive integer: ");
        N = TextIO.getInt();
        if (N > 0)
            break;
        System.out.println("That number is not positive. Please enter a positive number: ");
    } // end of while loop
    // Count the divisors, printing a "." after 1,000,000 tests.
    divisorCount = 0;
    numberTested = 0;
    for (testDivisor = 1; testDivisor <= N; testDivisor++)
    {
        if (N % testDivisor == 0)
        {
            count++;
            System.out.print(testDivisor + " ");
            divisorCount++;
            if (count >= 10)
            {
                System.out.println();
                count = 0;
            }
        }
    }
}
```

```
        numberTested++;
        if ((numberTested % 1000000) == 0)
        {
            // System.out.print("~");
        }
    } // end of for loop
    // Display the result
    System.out.println();
    System.out.println("The number of divisors of " + N + " is " + divisorCount);
} // end of main
} // end of class CountDivisors
```

Step 8: Click on the Compile button, and the program will be compiled. If there are any errors, correct the errors and compile the program again.

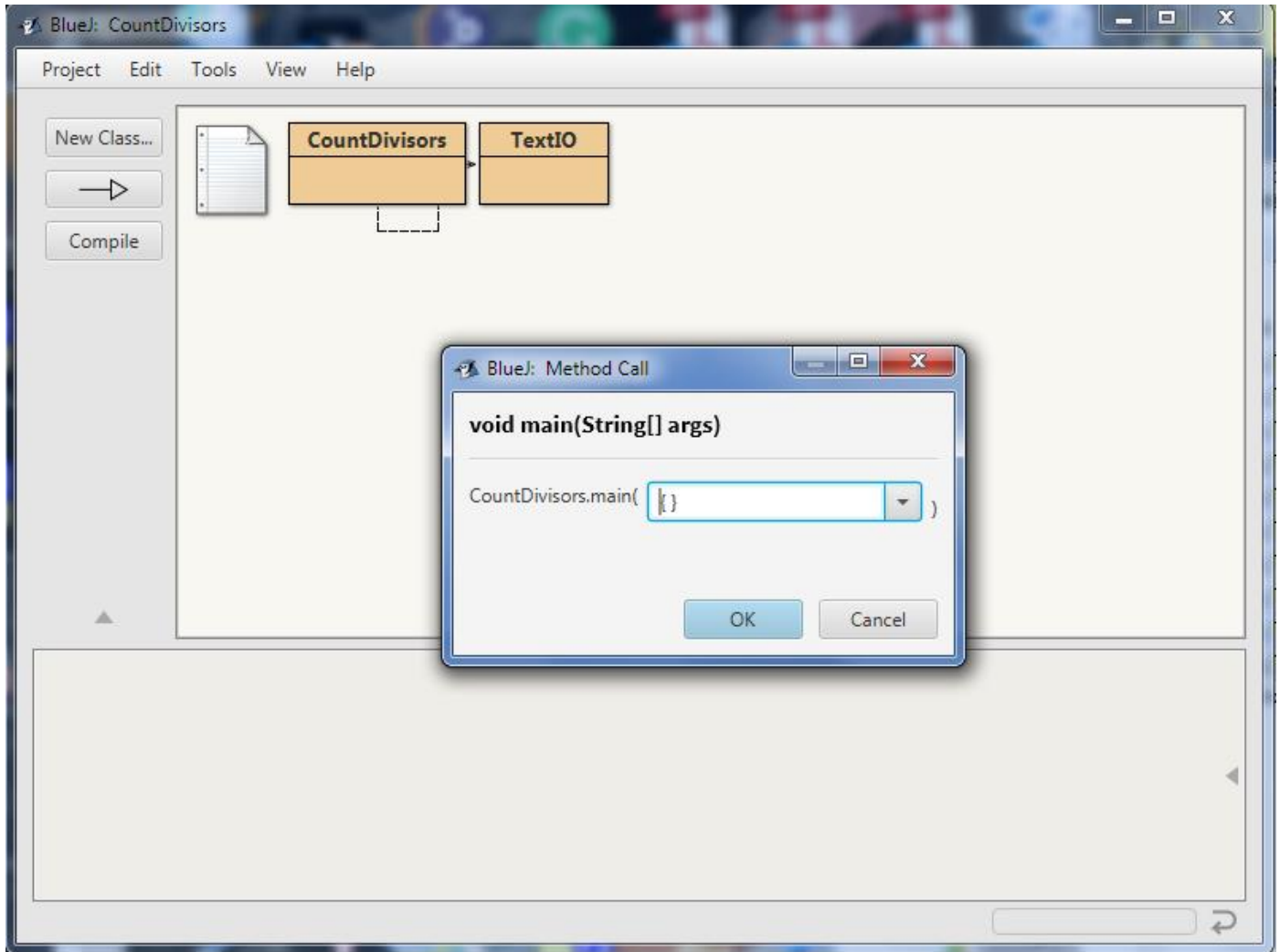
Step 9: Minimize the editor by click on the “\_” button in the upper right-hand corner of the screen.

Step 10: Right-click on the CountDivisor box and a drop-down menu will appear.

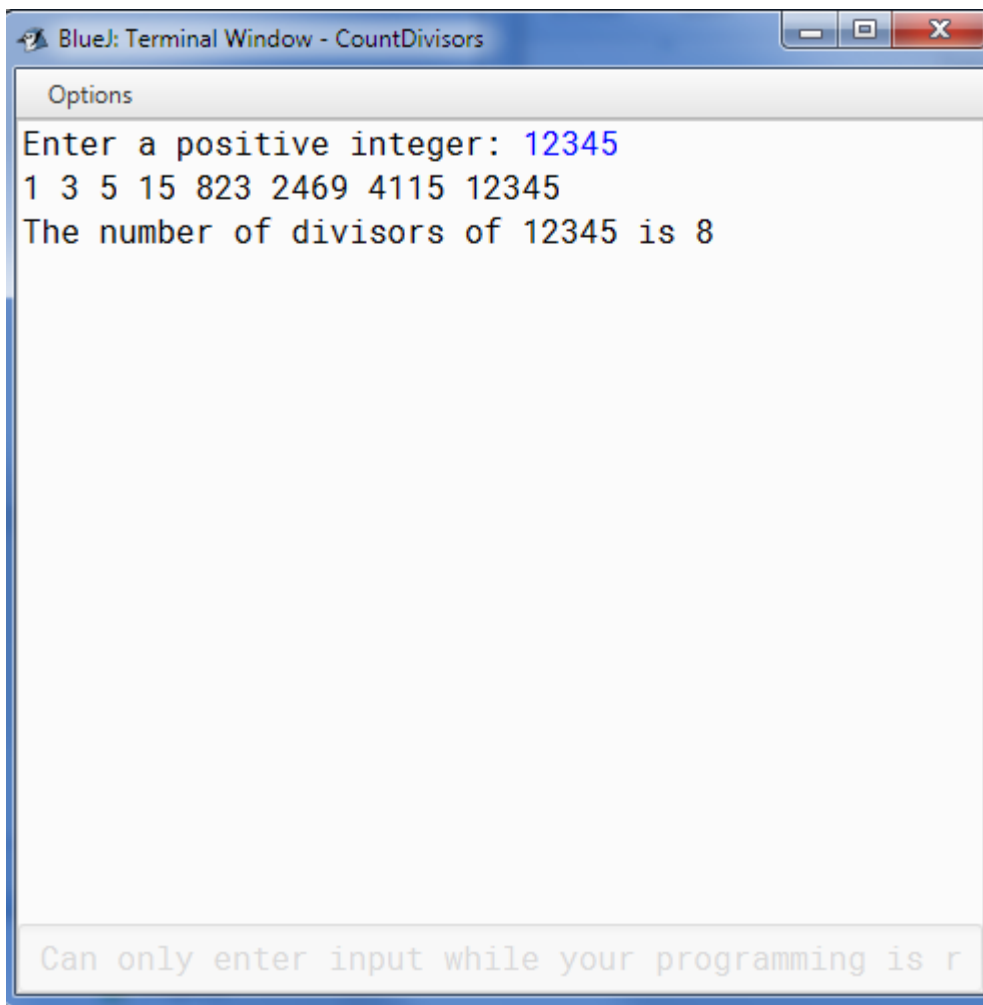
Step 11: Click on void main(String[] args) to start the program.

Step 12: Click on the OK button to run the program.

Step 13: A BlueJ Terminal Window will open, and you will see the output displayed.



Output:



```
BlueJ: Terminal Window - CountDivisors
Options
Enter a positive integer: 12345
1 3 5 15 823 2469 4115 12345
The number of divisors of 12345 is 8

Can only enter input while your programming is r
```