

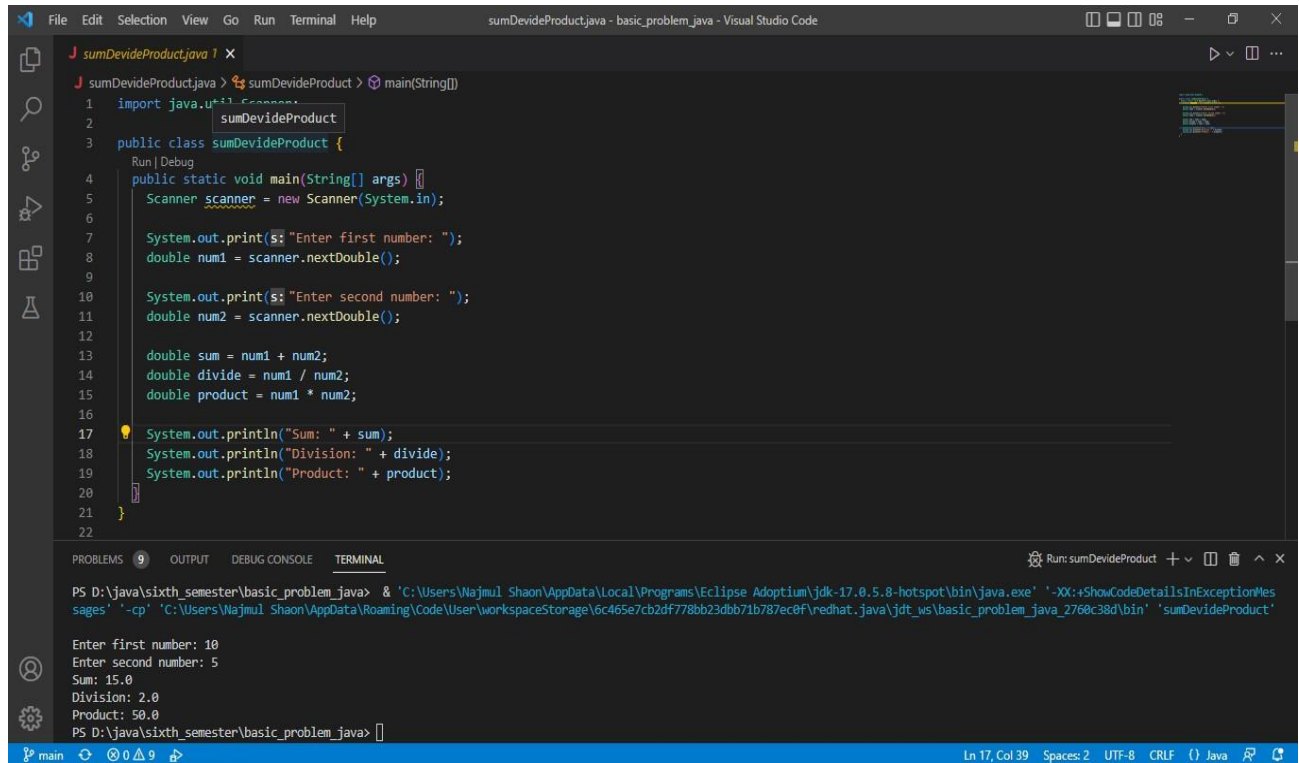
## Sub: Object Oriented Programming

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Roll: 65

Batch: E-88

**Problem 01:** Write a Java program to print the sum, divide, product of two numbers-



```
sumDevideProduct.java 1 X
J sumDevideProduct.java > sumDevideProduct > main(String[])
1 import java.util.Scanner;
2     sumDevideProduct
3 public class sumDevideProduct {
4     Run | Debug
5     public static void main(String[] args) {
6         Scanner scanner = new Scanner(System.in);
7
8         System.out.print("Enter first number: ");
9         double num1 = scanner.nextDouble();
10
11        System.out.print("Enter second number: ");
12        double num2 = scanner.nextDouble();
13
14        double sum = num1 + num2;
15        double divide = num1 / num2;
16        double product = num1 * num2;
17
18        System.out.println("Sum: " + sum);
19        System.out.println("Division: " + divide);
20        System.out.println("Product: " + product);
21    }
22 }
```

PROBLEMS 9 OUTPUT DEBUG CONSOLE TERMINAL

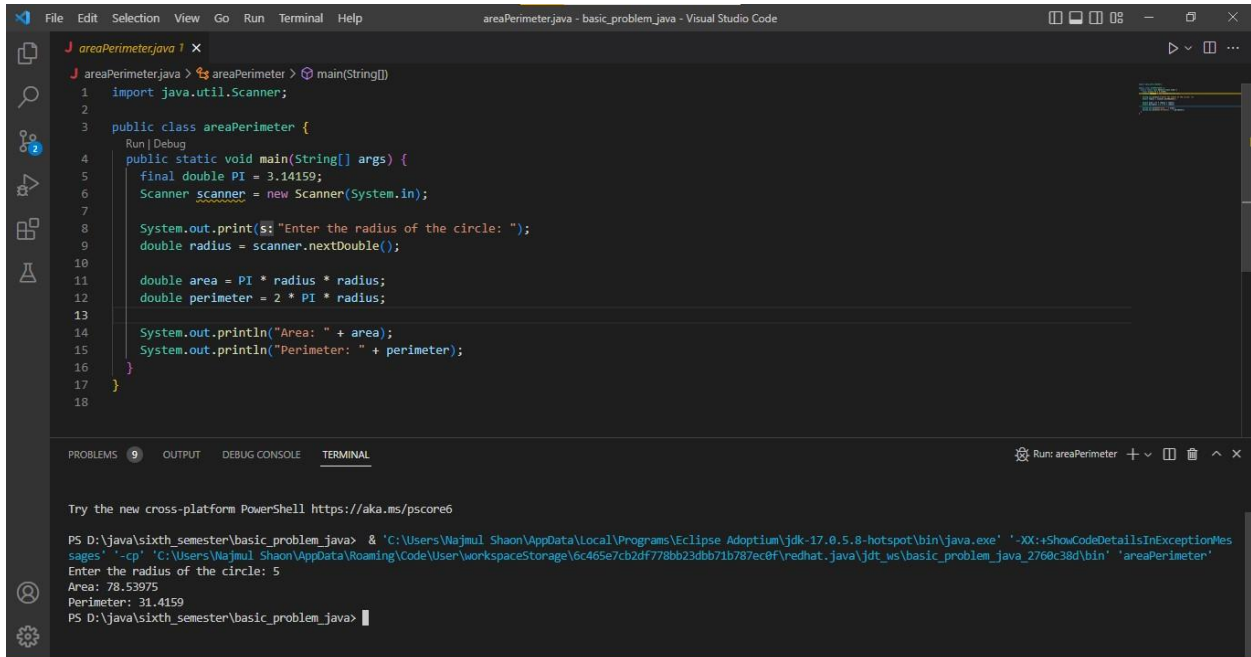
Run: sumDevideProduct

PS D:\java\sixth\_semester\basic\_problem\_java> & 'C:\Users\Wajmul Shaon\AppData\Local\Programs\Eclipse Adoptium\jdk-17.0.5-hotspot\bin\java.exe' '-XX:+ShowCodeDetailsInExceptionMessages' '-cp' 'C:\Users\Wajmul Shaon\AppData\Roaming\Code\User\workspaceStorage\6c465e7cb2df778bb23dbb71b787ec0f\redhat.java\jdt\_ws\basic\_problem\_java\_2760c38d\bin' 'sumDevideProduct'

Enter first number: 10  
Enter second number: 5  
Sum: 15.0  
Division: 2.0  
Product: 50.0  
PS D:\java\sixth\_semester\basic\_problem\_java>

Ln 17, Col 39 Spaces: 2 UTF-8 CRLF () Java

**Problem 02:** Write a Java program to print the area and perimeter of a circle-



```
areaPerimeter.java 1 x
J areaPerimeter.java > areaPerimeter > main(String[])
1 import java.util.Scanner;
2
3 public class areaPerimeter {
4     public static void main(String[] args) {
5         final double PI = 3.14159;
6         Scanner scanner = new Scanner(System.in);
7
8         System.out.print("$: Enter the radius of the circle: ");
9         double radius = scanner.nextDouble();
10
11         double area = PI * radius * radius;
12         double perimeter = 2 * PI * radius;
13
14         System.out.println("Area: " + area);
15         System.out.println("Perimeter: " + perimeter);
16     }
17 }
18
```

PROBLEMS 9 OUTPUT DEBUG CONSOLE TERMINAL Run: areaPerimeter + - X

Try the new cross-platform PowerShell <https://aka.ms/pscore6>

PS D:\java\sixth\_semester\basic\_problem\_java> & "C:\Users\Wajmul Shaon\AppData\Local\Programs\Eclipse Adoptium\jdk-17.0.5.8-hotspot\bin\java.exe" "-XX:+ShowCodeDetailsInExceptionMessages" "-cp" "C:\Users\Wajmul Shaon\AppData\Roaming\Code\User\workspaceStorage\6c465e7cb2df778bb23dbb71b787ec0f\redhat.java\jdt\_ws\basic\_problem\_java\_2760c38d\bin" "areaPerimeter"

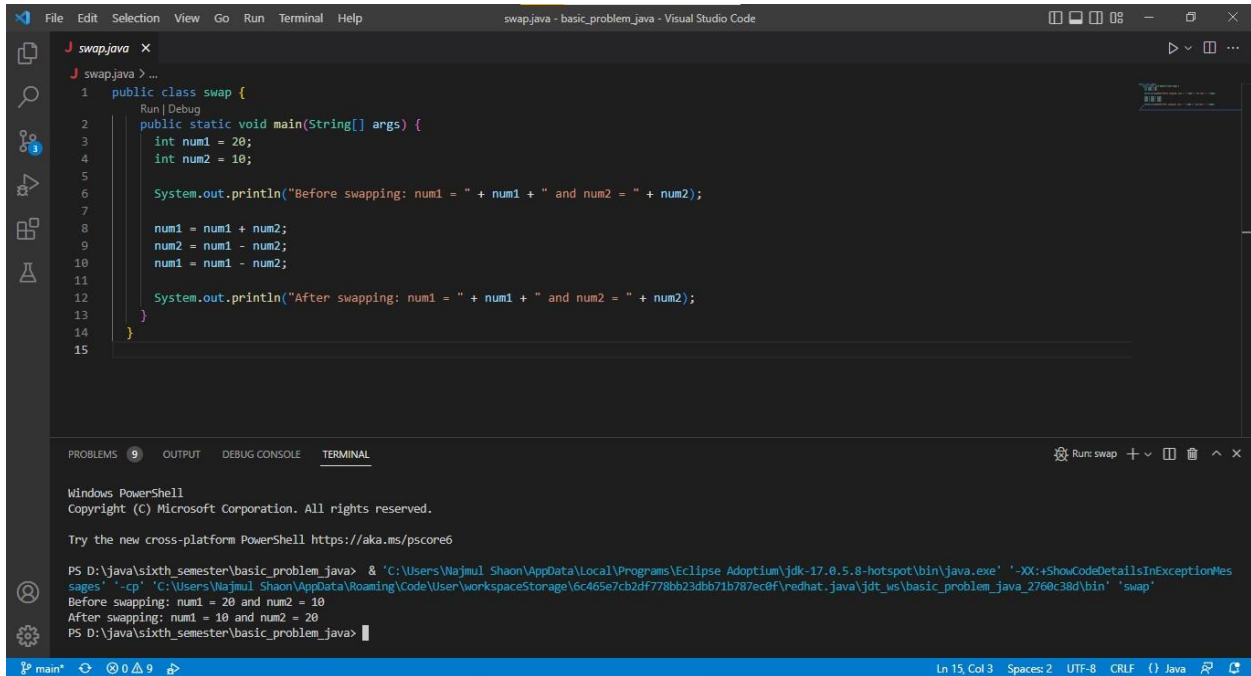
Enter the radius of the circle: 5

Area: 78.53975

Perimeter: 31.4159

PS D:\java\sixth\_semester\basic\_problem\_java>

**Problem 03:** Write a Java program to swap two variables without using third variable-



```
1 public class swap {
2     public static void main(String[] args) {
3         int num1 = 20;
4         int num2 = 10;
5
6         System.out.println("Before swapping: num1 = " + num1 + " and num2 = " + num2);
7
8         num1 = num1 + num2;
9         num2 = num1 - num2;
10        num1 = num1 - num2;
11
12        System.out.println("After swapping: num1 = " + num1 + " and num2 = " + num2);
13    }
14 }
15
```

Windows PowerShell  
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Try the new cross-platform PowerShell <https://aka.ms/pscore6>

PS D:\java\sixth\_semester\basic\_problem\_java> & 'C:\Users\Najmul Shaon\AppData\Local\Programs\Eclipse Adoptium\jdk-17.0.5.8-hotspot\bin\java.exe' '-XX:+ShowCodeDetailsInExceptionMessages' '-cp' 'C:\Users\Najmul Shaon\AppData\Roaming\Code\User\workspaceStorage\6c465e7cb2df778bb23dbb71b787ec0f\redhat.java\jdt\_ws\basic\_problem\_java\_2760c38d\bin' 'swap'

Before swapping: num1 = 20 and num2 = 10  
After swapping: num1 = 10 and num2 = 20  
PS D:\java\sixth\_semester\basic\_problem\_java>

**Problem 04:** Write a Java program to print a face:

The screenshot shows a Visual Studio Code editor with a Java file named `emoji.java`. The code defines a `main` method that prints a series of characters to form an emoji. The code is as follows:

```

1 public class emoji {
2     Run | Debug
3     public static void main(String[] args) {
4         System.out.println(x: "   ?????");
5         System.out.println(x: " | o o |");
6         System.out.println(x: "{ | ^ | }");
7         System.out.println(x: " | ' ' |");
8         System.out.println(x: " -----");
9     }
10 }

```

The code is executed, and the output is shown in the terminal. The output is a series of characters that form an emoji:

```

?????
 | o o |
{ | ^ | }
 | ' ' |
 -----

```

The terminal also shows the command prompt and the command used to run the program:

```

PS D:\java\sixth_semester\basic_problem_java> & 'C:\Users\Wajmul Shaon\AppData\Local\Programs\Eclipse Adoptium\jdk-17.0.5-hotspot\bin\java.exe' '-XX:+ShowCodeDetailsInExceptionMessages' '-cp' 'C:\Users\Wajmul Shaon\AppData\Roaming\Code\User\workspaceStorage\6c465e7cb2df778bb23dbb71b787ec0f\redhat.java\jdt_ws\basic_problem_java_2760c38d\bin' 'emoji'

```

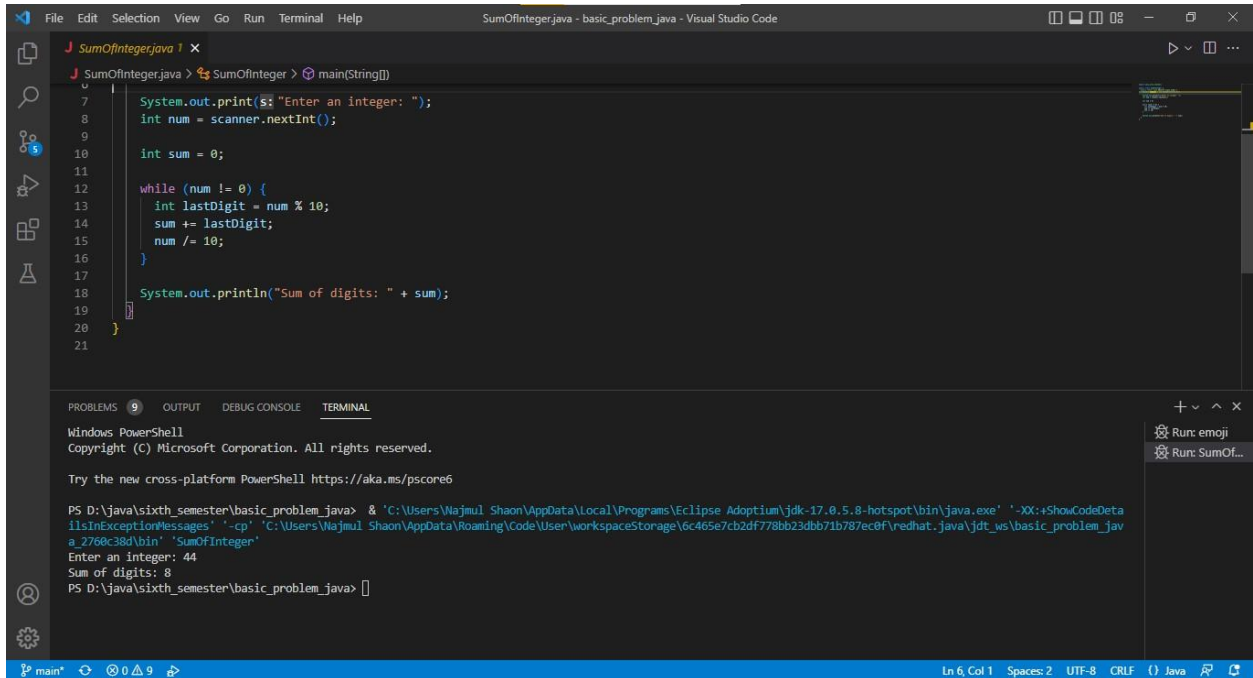
The terminal also shows the command prompt and the command used to run the program:

```

PS D:\java\sixth_semester\basic_problem_java>

```

**Problem 05:** Write a Java program and compute the sum of the digits of an integer-



```
SumOfInteger.java 1 X
J SumOfInteger.java > SumOfInteger > main(String[])
7   System.out.print("$: "Enter an integer: ");
8   int num = scanner.nextInt();
9
10  int sum = 0;
11
12  while (num != 0) {
13      int lastDigit = num % 10;
14      sum += lastDigit;
15      num /= 10;
16  }
17
18  System.out.println("Sum of digits: " + sum);
19
20  }
21  }
```

PROBLEMS 9 OUTPUT DEBUG CONSOLE TERMINAL

Windows PowerShell  
Copyright (C) Microsoft Corporation. All rights reserved.

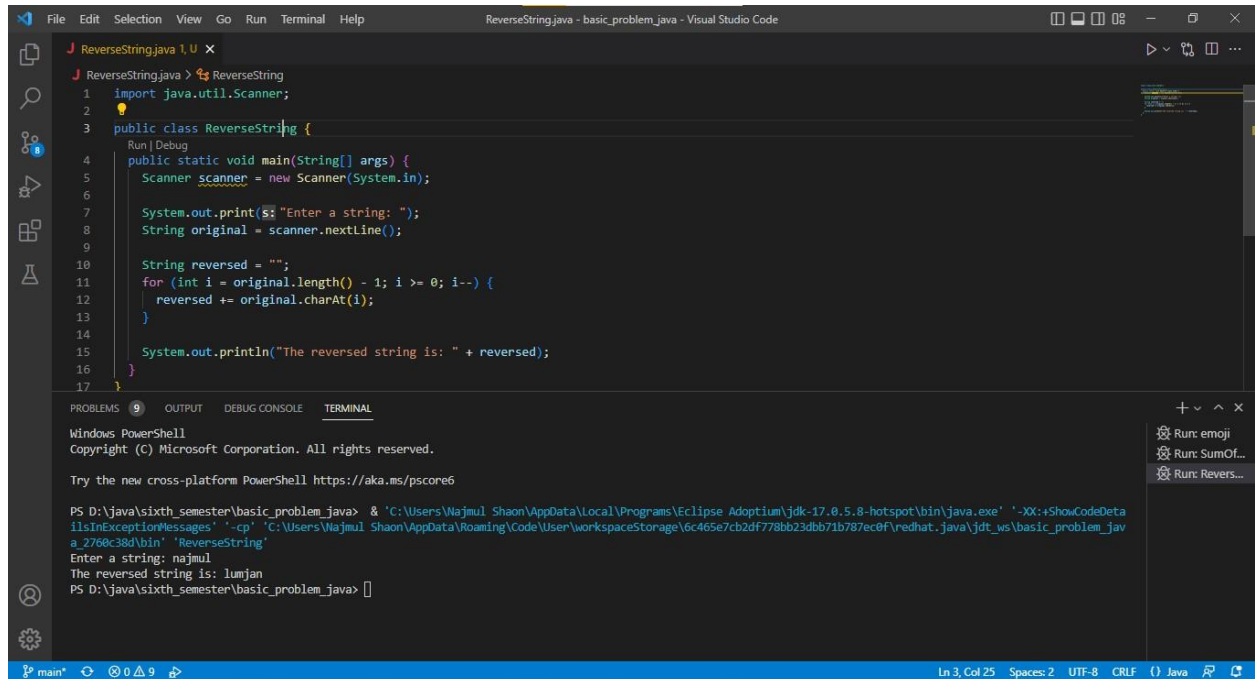
Try the new cross-platform PowerShell <https://aka.ms/pscore6>

PS D:\java\sixth\_semester\basic\_problem\_java> & 'C:\Users\Wajmul Shaon\AppData\Local\Programs\Eclipse Adoptium\jdk-17.0.5.8-hotspot\bin\java.exe' '-XX:+ShowCodeDetailsInExceptionMessages' '-cp' 'C:\Users\Wajmul Shaon\AppData\Roaming\Code\User\workspaceStorage\6c465e7cb2df778bb23dbb71b787ec0f\redhat\_java\jdt\_ws\basic\_problem\_java\2760c38d\bin' 'SumOfInteger'

Enter an integer: 44  
Sum of digits: 8  
PS D:\java\sixth\_semester\basic\_problem\_java>

Ln 6, Col 1 Spaces: 2 UTF-8 CRLF () Java

## Problem 06: Write a Java program to reverse a string-



```
ReverseString.java 1,0 x
ReverseString.java > ReverseString
1 import java.util.Scanner;
2
3 public class ReverseString {
4     public static void main(String[] args) {
5         Scanner scanner = new Scanner(System.in);
6
7         System.out.print("Enter a string: ");
8         String original = scanner.nextLine();
9
10        String reversed = "";
11        for (int i = original.length() - 1; i >= 0; i--) {
12            reversed += original.charAt(i);
13        }
14
15        System.out.println("The reversed string is: " + reversed);
16    }
17 }
```

PROBLEMS 9 OUTPUT DEBUG CONSOLE TERMINAL

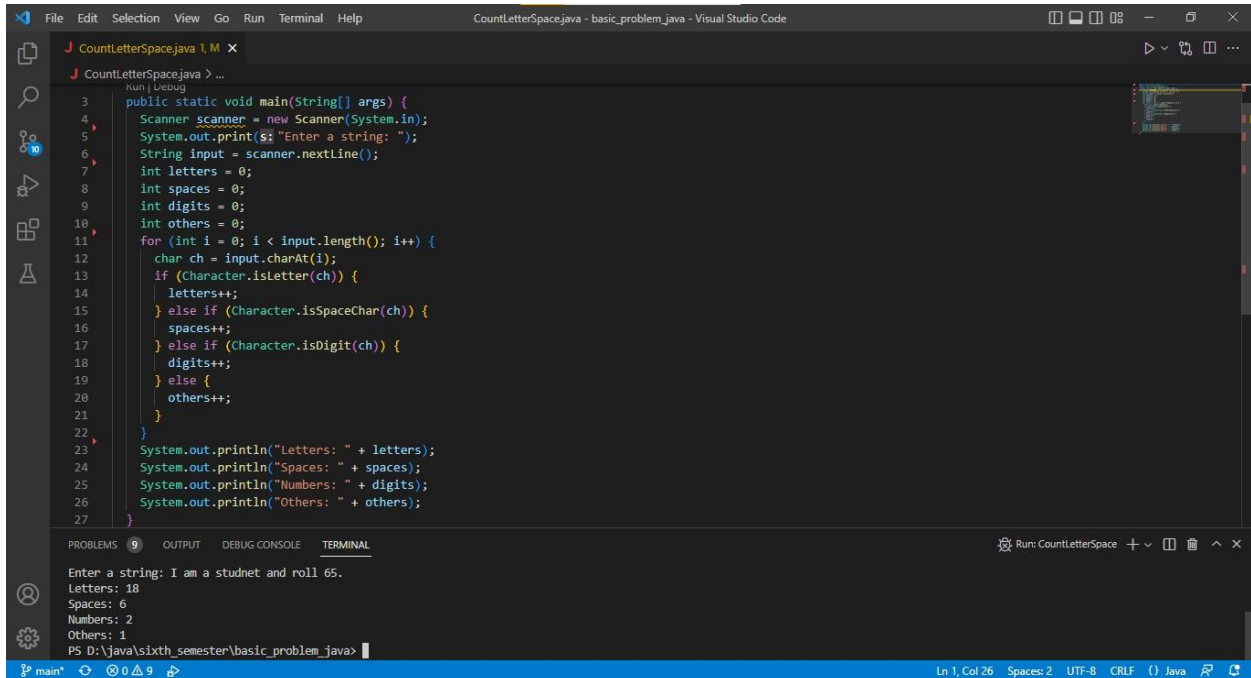
Windows PowerShell  
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Try the new cross-platform PowerShell <https://aka.ms/pscore6>

PS D:\java\sixth\_semester\basic\_problem\_java> & 'C:\Users\Wajmul\Shao\AppData\Local\Programs\Eclipse Adoptium\jdk-17.0.5.8-hotspot\bin\java.exe' '-XX:+ShowCodeDetailsInExceptionMessages' '-cp' 'C:\Users\Wajmul\Shao\AppData\Roaming\Code\User\workspaceStorage\6c465e7cb2df778bb23dbb71b787ec0f\redhat.java\jdt\_ws\basic\_problem\_java\_2760c38d\bin' 'ReverseString'  
Enter a string: najmul  
The reversed string is: lumjan  
PS D:\java\sixth\_semester\basic\_problem\_java>

Ln 3, Col 25 Spaces: 2 UTF-8 CRLF () Java

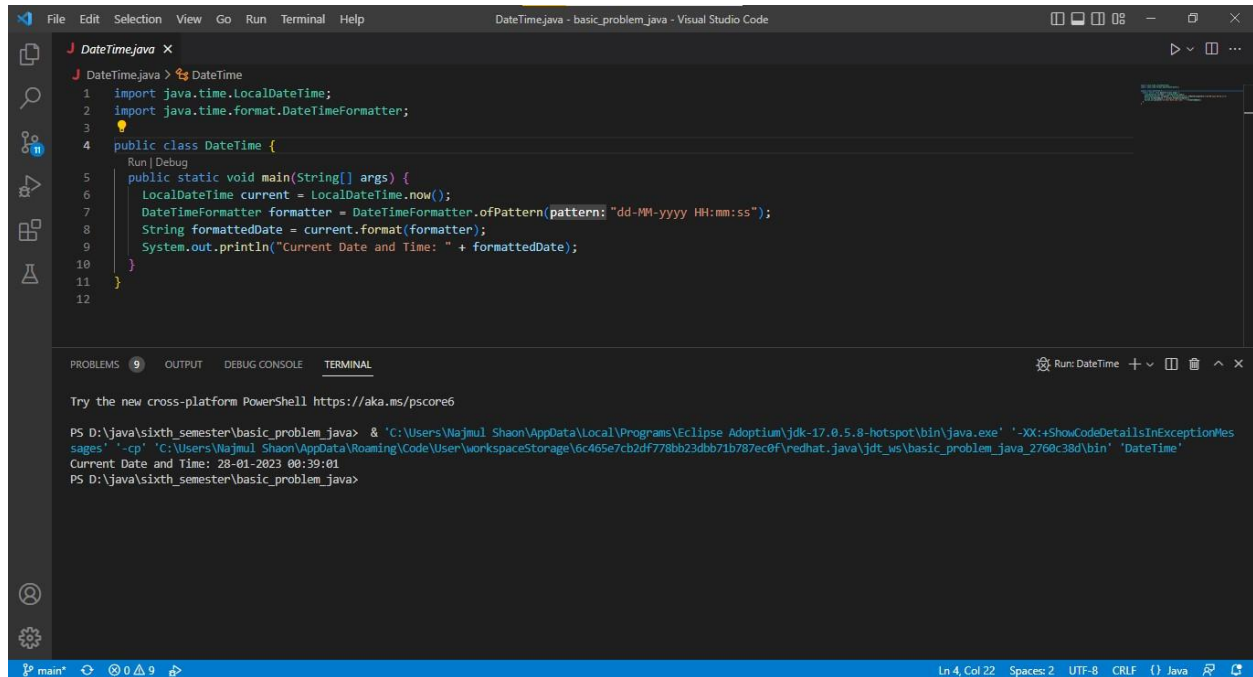
**Problem 07:** Write a Java program to count the letters, spaces, numbers and other characters of an input string-



```
CountLetterSpace.java 1, M X
CountLetterSpace.java > ...
3 public static void main(String[] args) {
4     Scanner scanner = new Scanner(System.in);
5     System.out.print("Enter a string: ");
6     String input = scanner.nextLine();
7     int letters = 0;
8     int spaces = 0;
9     int digits = 0;
10    int others = 0;
11    for (int i = 0; i < input.length(); i++) {
12        char ch = input.charAt(i);
13        if (Character.isLetter(ch)) {
14            letters++;
15        } else if (Character.isSpaceChar(ch)) {
16            spaces++;
17        } else if (Character.isDigit(ch)) {
18            digits++;
19        } else {
20            others++;
21        }
22    }
23    System.out.println("Letters: " + letters);
24    System.out.println("Spaces: " + spaces);
25    System.out.println("Numbers: " + digits);
26    System.out.println("Others: " + others);
27 }

PROBLEMS 9 OUTPUT DEBUG CONSOLE TERMINAL
Enter a string: I am a studnet and roll 65.
Letters: 18
Spaces: 6
Numbers: 2
Others: 1
PS D:\java\sixth_semester\basic_problem_java>
```

**Problem 09:** Write a Java program to display the current date time in specific format.



The screenshot shows a Visual Studio Code editor window with a Java file named `DateTime.java`. The code imports `java.time.LocalDateTime` and `java.time.format.DateTimeFormatter`. It defines a `DateTime` class with a `main` method that uses `LocalDateTime.now()` to get the current date and time, formats it using `DateTimeFormatter.ofPattern("dd-MM-yyyy HH:mm:ss")`, and prints it to the console.

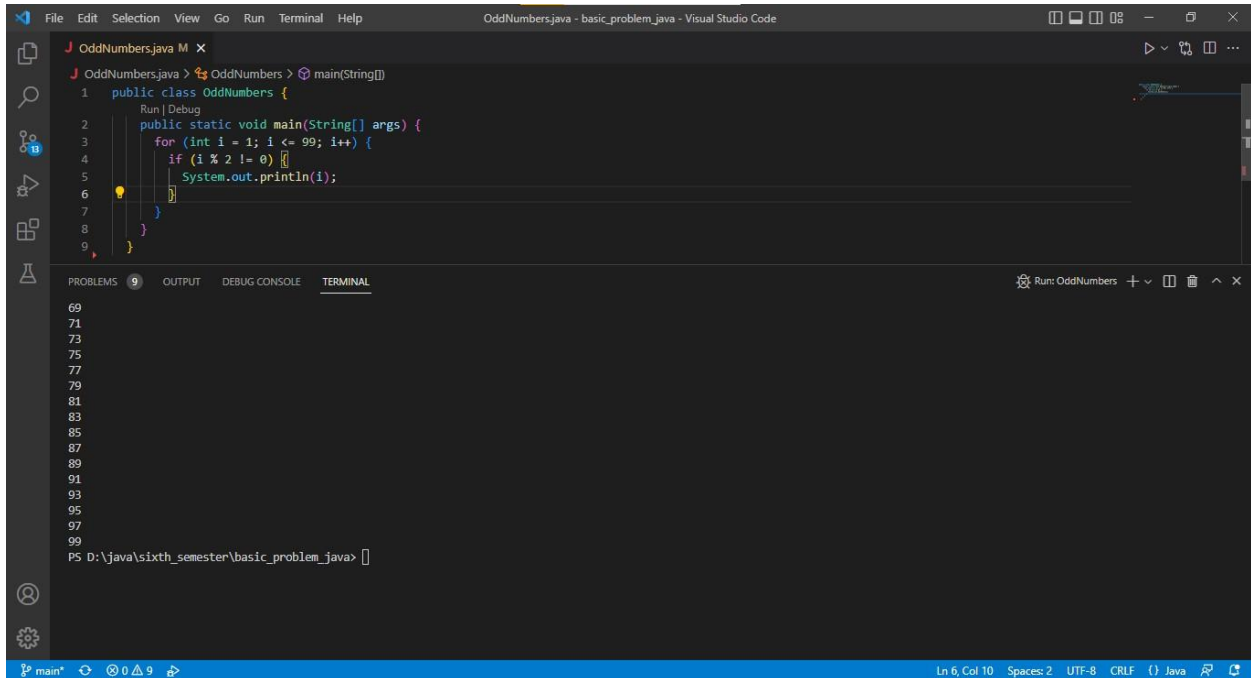
```
DateTime.java > DateTime
1 import java.time.LocalDateTime;
2 import java.time.format.DateTimeFormatter;
3
4 public class DateTime {
5     public static void main(String[] args) {
6         LocalDateTime current = LocalDateTime.now();
7         DateTimeFormatter formatter = DateTimeFormatter.ofPattern(pattern: "dd-MM-yyyy HH:mm:ss");
8         String formattedDate = current.format(formatter);
9         System.out.println("Current Date and Time: " + formattedDate);
10    }
11 }
12
```

The terminal output shows the command to run the program and the resulting date and time:

```
PS D:\java\sixth_semester\basic_problem_java> & 'C:\Users\Wajmul Shaon\AppData\Local\Programs\Eclipse Adoptium\jdk-17.0.5-hotspot\bin\java.exe' '-XX:+ShowCodeDetailsInExceptionMessages' -cp 'C:\Users\Wajmul Shaon\AppData\Roaming\Code\User\workspaceStorage\6c465e7cb2df778bb23dbb71b787ec0f\redhat.java\jdt_ws\basic_problem_java_2760c38d\bin' 'DateTime'
Current Date and Time: 28-01-2023 00:39:01
PS D:\java\sixth_semester\basic_problem_java>
```



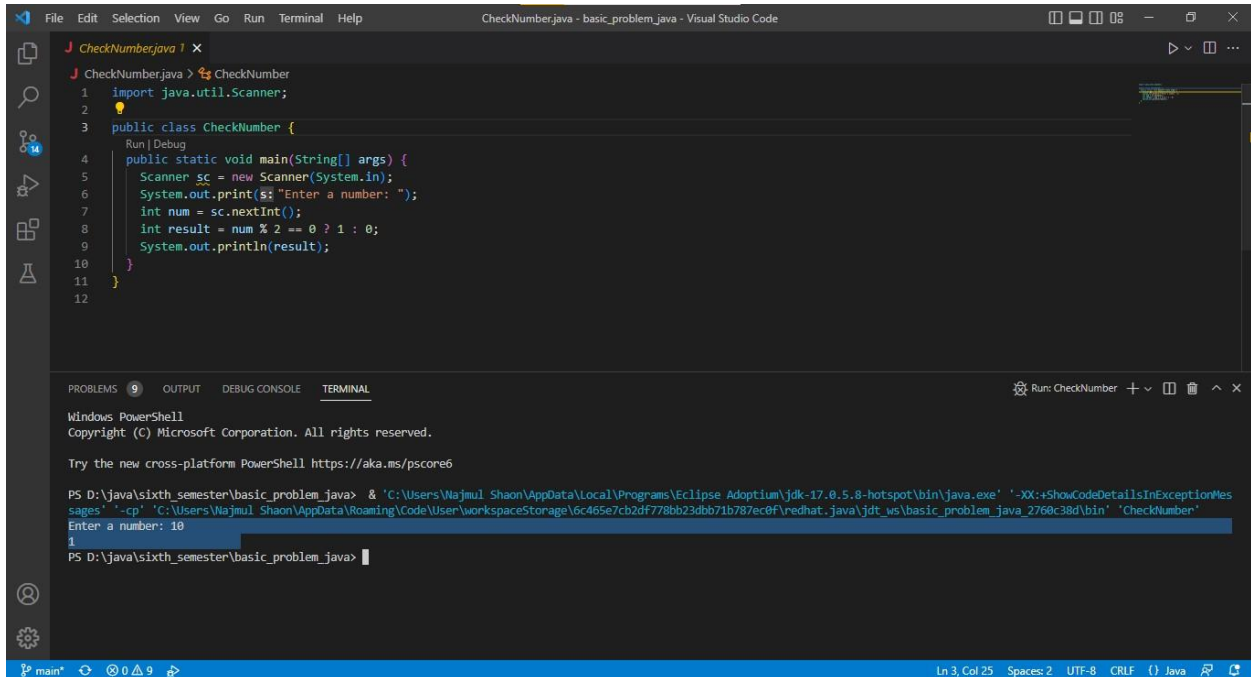
**Problem 10:** Write a Java program to print the odd numbers from 1 to 99. Prints one number per line.



```
OddNumbers.java M X
OddNumbers.java > OddNumbers > main(String[])
1 public class OddNumbers {
2     public static void main(String[] args) {
3         for (int i = 1; i <= 99; i++) {
4             if (i % 2 != 0) {
5                 System.out.println(i);
6             }
7         }
8     }
9 }

PROBLEMS 9 OUTPUT DEBUG CONSOLE TERMINAL
Run: OddNumbers
69
71
73
75
77
79
81
83
85
87
89
91
93
95
97
99
PS D:\java\sixth_semester\basic_problem_java>
```

**Problem 11:** Write a Java program to accept a number and check the number is even or not. Prints 1 if the number is even or 0 if the number is odd.



```
File Edit Selection View Go Run Terminal Help
CheckNumber.java - basic_problem_java - Visual Studio Code

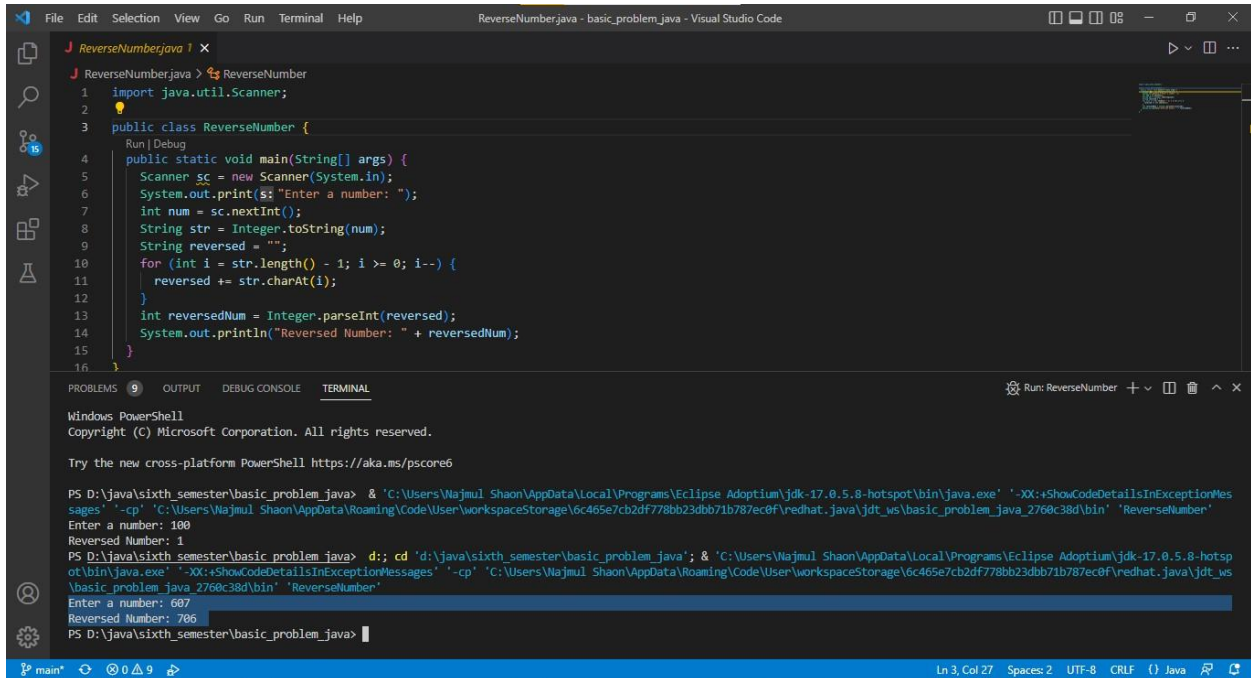
J CheckNumber.java 1 X
J CheckNumber.java > CheckNumber
1 import java.util.Scanner;
2
3 public class CheckNumber {
4     public static void main(String[] args) {
5         Scanner sc = new Scanner(System.in);
6         System.out.print("Enter a number: ");
7         int num = sc.nextInt();
8         int result = num % 2 == 0 ? 1 : 0;
9         System.out.println(result);
10    }
11 }
12

PROBLEMS 9 OUTPUT DEBUG CONSOLE TERMINAL
Run: CheckNumber + - X
Windows PowerShell
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Try the new cross-platform PowerShell https://aka.ms/pscore6

PS D:\java\sixth_semester\basic_problem_java> & 'C:\Users\Wajmul Shaon\AppData\Local\Programs\Eclipse Adoptium\jdk-17.0.5.8-hotspot\bin\java.exe' '-XX:+ShowCodeDetailsInExceptionMessages' '-cp' 'C:\Users\Wajmul Shaon\AppData\Roaming\Code\User\workspaceStorage\6c465e7cb2df778bb23dbb71b787ec0f\redhat.java\jdt_ws\basic_problem_java_2760c38d\bin' 'CheckNumber'
Enter a number: 10
1
PS D:\java\sixth_semester\basic_problem_java>
```

## Problem 12: Write a Java program to reverse a number.



```
ReverseNumber.java 1 x
ReverseNumber.java > ReverseNumber
1 import java.util.Scanner;
2
3 public class ReverseNumber {
4     public static void main(String[] args) {
5         Scanner sc = new Scanner(System.in);
6         System.out.print("Enter a number: ");
7         int num = sc.nextInt();
8         String str = Integer.toString(num);
9         String reversed = "";
10        for (int i = str.length() - 1; i >= 0; i--) {
11            reversed += str.charAt(i);
12        }
13        int reversedNum = Integer.parseInt(reversed);
14        System.out.println("Reversed Number: " + reversedNum);
15    }
16 }
```

PROBLEMS 9 OUTPUT DEBUG CONSOLE TERMINAL

Windows PowerShell  
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Try the new cross-platform PowerShell <https://aka.ms/pscore6>

PS D:\java\sixth\_semester\basic\_problem\_java> & 'C:\Users\Wajmul Shaon\AppData\Local\Programs\Eclipse Adoptium\jdk-17.0.5.8-hotspot\bin\java.exe' '-XX:+ShowCodeDetailsInExceptionMessages' '-cp' 'C:\Users\Wajmul Shaon\AppData\Roaming\Code\User\workspaceStorage\6c465e7cb2df778bb23dbb71b787ec0f\redhat.java\jdt\_ws\basic\_problem\_java\_2760c38d\bin' 'ReverseNumber'

Enter a number: 100  
Reversed Number: 1

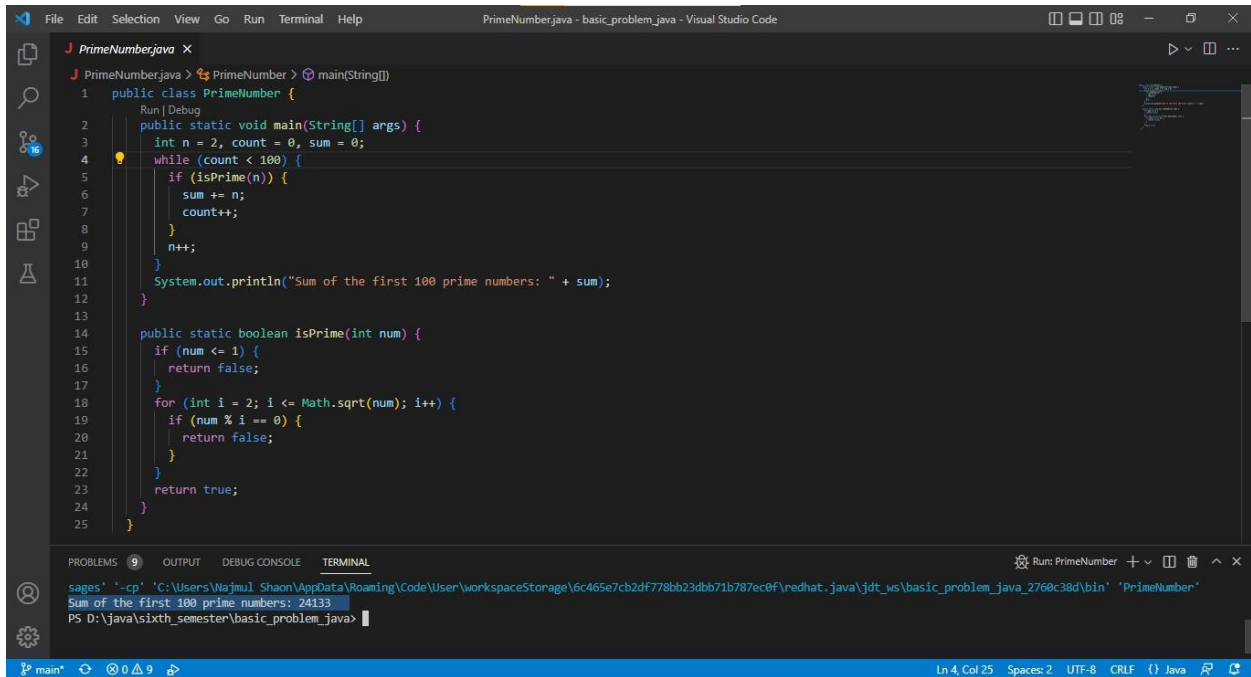
PS D:\java\sixth\_semester\basic\_problem\_java> d; cd 'd:\java\sixth\_semester\basic\_problem\_java'; & 'C:\Users\Wajmul Shaon\AppData\Local\Programs\Eclipse Adoptium\jdk-17.0.5.8-hotspot\bin\java.exe' '-XX:+ShowCodeDetailsInExceptionMessages' '-cp' 'C:\Users\Wajmul Shaon\AppData\Roaming\Code\User\workspaceStorage\6c465e7cb2df778bb23dbb71b787ec0f\redhat.java\jdt\_ws\basic\_problem\_java\_2760c38d\bin' 'ReverseNumber'

Enter a number: 607  
Reversed Number: 706

PS D:\java\sixth\_semester\basic\_problem\_java>

main\* 0 9 Ln 3, Col 27 Spaces: 2 UTF-8 CRLF {} Java

**Problem 13:** Write a Java program to compute the sum of the first 100 prime numbers.



```
PrimeNumber.java
PrimeNumber > main(String[])
1 public class PrimeNumber {
2     public static void main(String[] args) {
3         int n = 2, count = 0, sum = 0;
4         while (count < 100) {
5             if (isPrime(n)) {
6                 sum += n;
7                 count++;
8             }
9             n++;
10        }
11        System.out.println("Sum of the first 100 prime numbers: " + sum);
12    }
13
14    public static boolean isPrime(int num) {
15        if (num <= 1) {
16            return false;
17        }
18        for (int i = 2; i <= Math.sqrt(num); i++) {
19            if (num % i == 0) {
20                return false;
21            }
22        }
23        return true;
24    }
25 }
```

PROBLEMS 9 OUTPUT DEBUG CONSOLE TERMINAL

Run: PrimeNumber

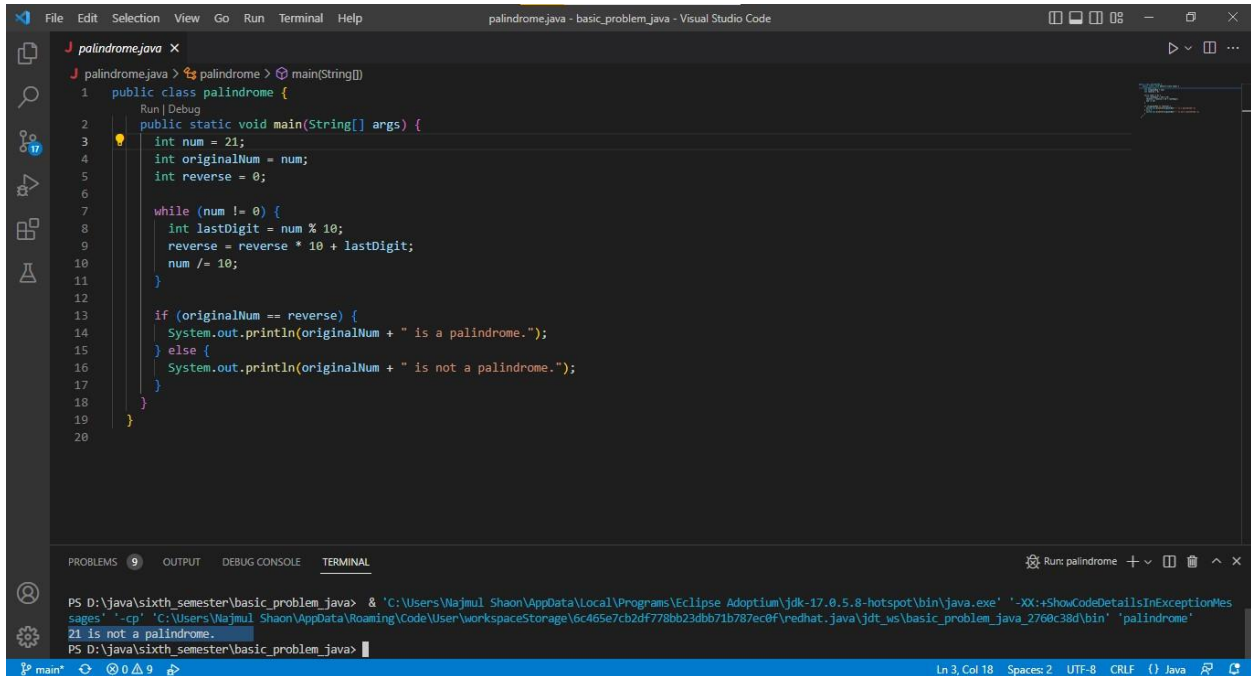
sages' '-cp' 'C:\Users\Wajmul Shaon\AppData\Roaming\Code\User\workspaceStorage\6c465e7cb2d4f778bb23dbb71b787ec0f\redhat.java\jdt\_ws\basic\_problem\_java\_2760c38d\bin' 'PrimeNumber'

Sum of the first 100 prime numbers: 24133

PS D:\java\sixth\_semester\basic\_problem\_java>

Ln 4, Col 25 Spaces: 2 UTF-8 CRLF {} Java

**Problem 14:** Write a Java program to check if a positive number is a palindrome or not.

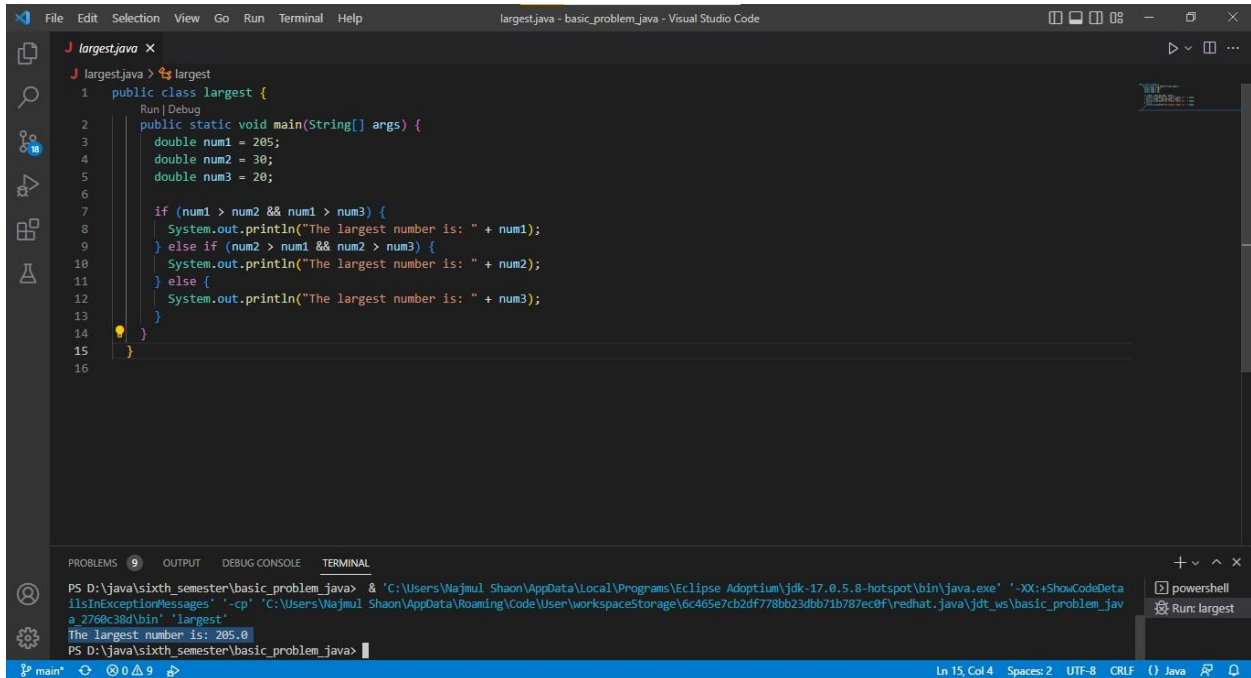


```
File Edit Selection View Go Run Terminal Help
palindrome.java - basic_problem_java - Visual Studio Code

J palindrome.java x
J palindrome.java > palindome > main(String[])
1 public class palindrome {
2     public static void main(String[] args) {
3         int num = 21;
4         int originalNum = num;
5         int reverse = 0;
6
7         while (num != 0) {
8             int lastDigit = num % 10;
9             reverse = reverse * 10 + lastDigit;
10            num /= 10;
11        }
12
13        if (originalNum == reverse) {
14            System.out.println(originalNum + " is a palindrome.");
15        } else {
16            System.out.println(originalNum + " is not a palindrome.");
17        }
18    }
19 }
20

PROBLEMS 9 OUTPUT DEBUG CONSOLE TERMINAL
Run: palindrome + - - - - -
PS D:\java\sixth_semester\basic_problem_java> & 'C:\Users\Wajmul Shaon\AppData\Local\Programs\Eclipse Adoptium\jdk-17.0.5.8-hotspot\bin\java.exe' '-XX:+ShowCodeDetailsInExceptionMessages' '-cp' 'C:\Users\Wajmul Shaon\AppData\Roaming\Code\User\workspaceStorage\6c465e7cb2df778bb23dbb71b787ec0f\redhat.java\jdt_ws\basic_problem_java_2760c38d\bin' 'palindrome'
21 is not a palindrome.
PS D:\java\sixth_semester\basic_problem_java>
```

**Problem 15:** Write a Java Program to find the largest of three numbers using if else if



```
largest.java - basic_problem_java - Visual Studio Code

largest.java
1 public class largest {
2     public static void main(String[] args) {
3         double num1 = 205;
4         double num2 = 30;
5         double num3 = 20;
6
7         if (num1 > num2 && num1 > num3) {
8             System.out.println("The largest number is: " + num1);
9         } else if (num2 > num1 && num2 > num3) {
10            System.out.println("The largest number is: " + num2);
11        } else {
12            System.out.println("The largest number is: " + num3);
13        }
14    }
15 }
16
```

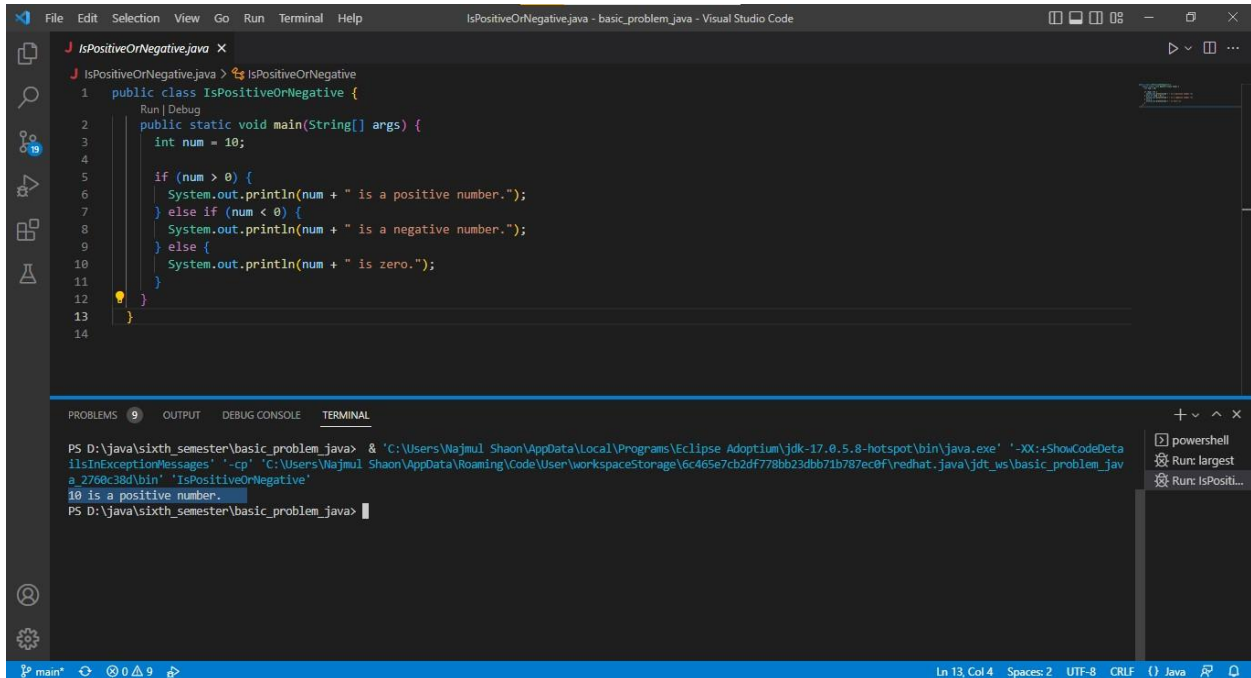
PROBLEMS 9 OUTPUT DEBUG CONSOLE TERMINAL

PS D:\java\sixth\_semester\basic\_problem\_java> 'C:\Users\Najmul Shaon\AppData\Local\Programs\Eclipse Adoptium\jdk-17.0.5.8-hotspot\bin\java.exe' '-XX:+ShowCodeDetailsInExceptionMessages' '-cp' 'C:\Users\Najmul Shaon\AppData\Roaming\Code\User\workspaceStorage\6c465e7cb2df778bb23dbb71b787ec0f\redhat.java\jdt\_ws\basic\_problem\_java\2760c38d\bin' 'largest'

The largest number is: 205.0

PS D:\java\sixth\_semester\basic\_problem\_java>

**Problem 16:** Write a Java Program to check if number is positive or negative.



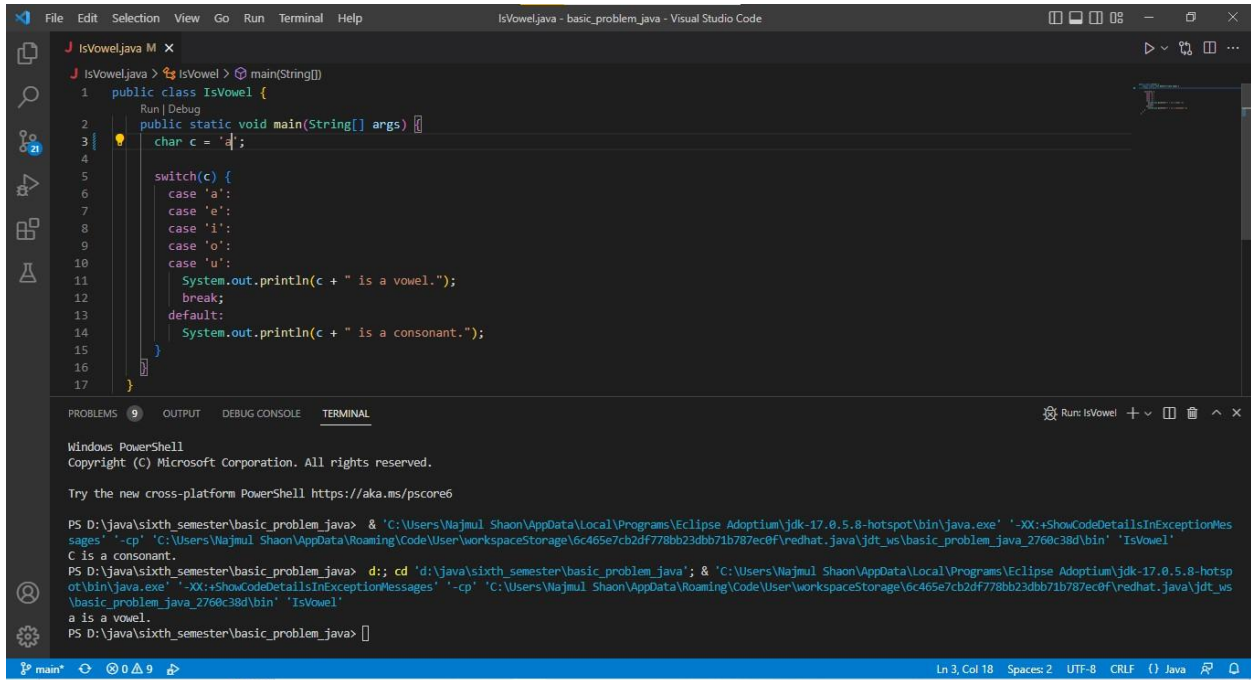
```
IsPositiveOrNegative.java
1 public class IsPositiveOrNegative {
2     public static void main(String[] args) {
3         int num = 10;
4
5         if (num > 0) {
6             System.out.println(num + " is a positive number.");
7         } else if (num < 0) {
8             System.out.println(num + " is a negative number.");
9         } else {
10            System.out.println(num + " is zero.");
11        }
12    }
13 }
14
```

PROBLEMS 9 OUTPUT DEBUG CONSOLE TERMINAL

```
PS D:\java\sixth_semester\basic_problem_java> & 'C:\Users\Najmul Shaon\AppData\Local\Programs\Eclipse Adoptium\jdk-17.0.5-hotspot\bin\java.exe' '-XX:+ShowCodeData
1lsInExceptionMessages' '-cp' 'C:\Users\Najmul Shaon\AppData\Roaming\Code\User\workspaceStorage\6c465e7cb2df778bb23dbb71b787ec0F\redhat_java\jdt_ws\basic_problem_jav
a 2760c38d\bin' 'IsPositiveOrNegative'
10 is a positive number.
PS D:\java\sixth_semester\basic_problem_java>
```

main\* 0 9 Ln 13, Col 4 Spaces: 2 UTF-8 CRLF Java

## Problem 17: Write a Java Program to check whether a char is vowel or Consonant using Switch Case



```
IsVowel.java - basic_problem_java - Visual Studio Code
File Edit Selection View Go Run Terminal Help

IsVowel.java M X
IsVowel.java > IsVowel > main(String[])
1 public class IsVowel {
2     public static void main(String[] args) {
3         char c = 'd';
4
5         switch(c) {
6             case 'a':
7             case 'e':
8             case 'i':
9             case 'o':
10            case 'u':
11                System.out.println(c + " is a vowel.");
12                break;
13            default:
14                System.out.println(c + " is a consonant.");
15            }
16        }
17    }
}

PROBLEMS 9 OUTPUT DEBUG CONSOLE TERMINAL
Run: IsVowel + - X

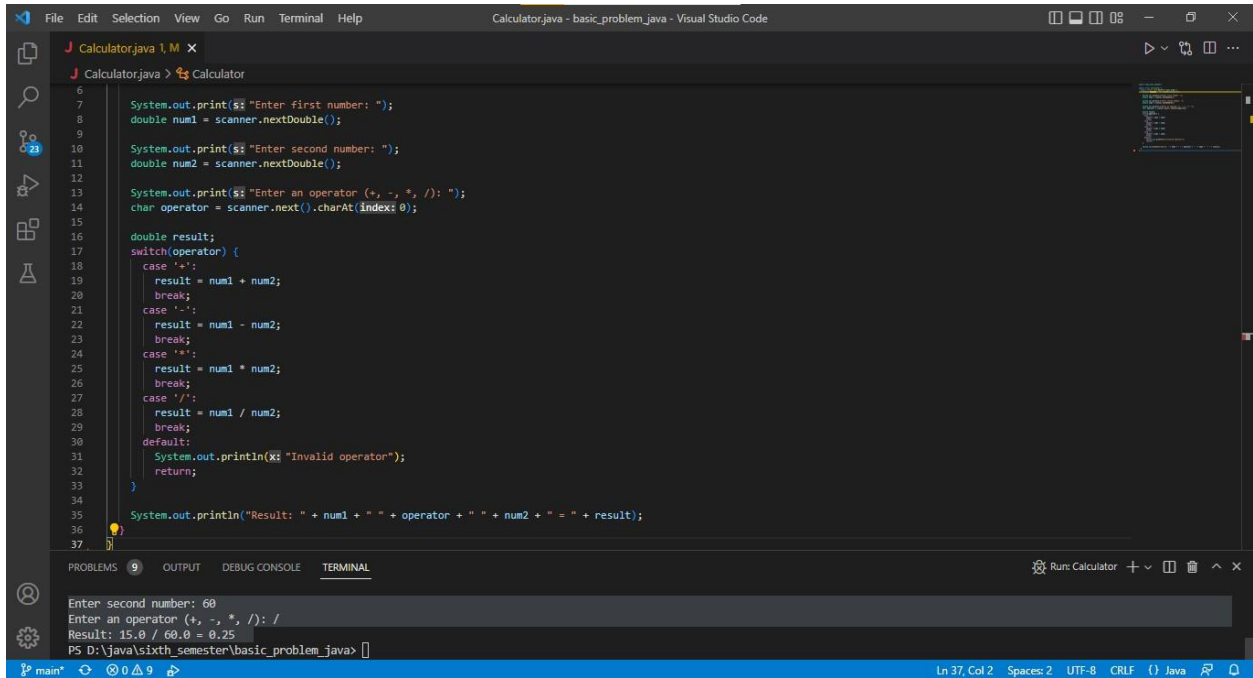
Windows PowerShell
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PS D:\java\sixth_semester\basic_problem_java> & 'C:\Users\Wajmul Shaon\AppData\Local\Programs\Eclipse Adoptium\jdk-17.0.5.8-hotspot\bin\java.exe' '-XX:+ShowCodeDetailsInExceptionMessages' '-cp' 'C:\Users\Wajmul Shaon\AppData\Roaming\Code\User\workspaceStorage\6c465e7cb2df778bb23dbb71b787ec0f\redhat.java\jdt_ws\basic_problem_java_2760c38d\bin' 'IsVowel'
C is a consonant.
PS D:\java\sixth_semester\basic_problem_java> d; cd 'd:\java\sixth_semester\basic_problem_java'; & 'C:\Users\Wajmul Shaon\AppData\Local\Programs\Eclipse Adoptium\jdk-17.0.5.8-hotspot\bin\java.exe' '-XX:+ShowCodeDetailsInExceptionMessages' '-cp' 'C:\Users\Wajmul Shaon\AppData\Roaming\Code\User\workspaceStorage\6c465e7cb2df778bb23dbb71b787ec0f\redhat.java\jdt_ws\basic_problem_java_2760c38d\bin' 'IsVowel'
a is a vowel.
PS D:\java\sixth_semester\basic_problem_java>
```

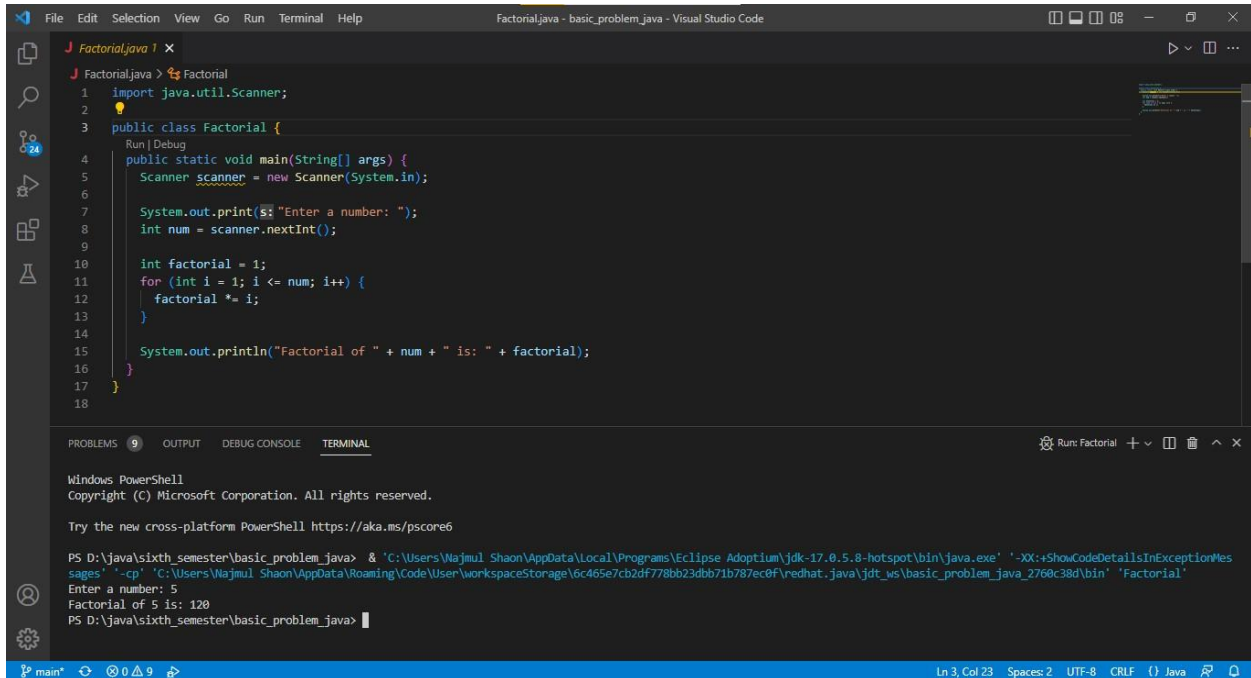


## Problem 18: Write a Java Program to make a Simple Calculator using Switch Case.



```
Calculator.java 1, M X
Calculator.java > Calculator
6
7
8 System.out.print("${ "Enter first number: ");
9 double num1 = scanner.nextDouble();
10
11 System.out.print("${ "Enter second number: ");
12 double num2 = scanner.nextDouble();
13
14 System.out.print("${ "Enter an operator (+, -, *, /): ");
15 char operator = scanner.next().charAt(index: 0);
16
17 double result;
18 switch(operator) {
19     case '+':
20         result = num1 + num2;
21         break;
22     case '-':
23         result = num1 - num2;
24         break;
25     case '*':
26         result = num1 * num2;
27         break;
28     case '/':
29         result = num1 / num2;
30         break;
31     default:
32         System.out.println("${ "Invalid operator");
33         return;
34 }
35
36 System.out.println("Result: " + num1 + " " + operator + " " + num2 + " = " + result);
37
PROBLEMS 9 OUTPUT DEBUG CONSOLE TERMINAL
Run: Calculator + - x
Enter second number: 60
Enter an operator (+, -, *, /): /
Result: 15.0 / 60.0 = 0.25
PS D:\java\sixth_semester\basic_problem_java>
```

**Problem 19:** Write a Java Program to find factorial of a number using loops.



```
File Edit Selection View Go Run Terminal Help
Factorial.java - basic_problem_java - Visual Studio Code

J Factorial.java 1 X
J Factorial.java > Factorial
1 import java.util.Scanner;
2
3 public class Factorial {
4     public static void main(String[] args) {
5         Scanner scanner = new Scanner(System.in);
6
7         System.out.print("$: Enter a number: ");
8         int num = scanner.nextInt();
9
10        int factorial = 1;
11        for (int i = 1; i <= num; i++) {
12            factorial *= i;
13        }
14
15        System.out.println("Factorial of " + num + " is: " + factorial);
16    }
17 }
18

PROBLEMS 9 OUTPUT DEBUG CONSOLE TERMINAL
Windows PowerShell
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PS D:\java\sixth_semester\basic_problem_java> & "C:\Users\Wajmul Shaon\AppData\Local\Programs\Eclipse Adoptium\jdk-17.0.5.8-hotspot\bin\java.exe" "-XX:+ShowCodeDetailsInExceptionMessages" "-cp" "C:\Users\Wajmul Shaon\AppData\Roaming\Code\User\workspaceStorage\6c465e7cb2df778bb23dbb71b787ec8f\redhat.java\jdt_ws\basic_problem_java_2760c38d\bin" "Factorial"
Enter a number: 5
Factorial of 5 is: 120
PS D:\java\sixth_semester\basic_problem_java>
```

## Problem 20: Write a Java Program to print Fibonacci Series using loop.

```
Fibonacci.java
1 public class Fibonacci {
2     public static int fibonacci(int n) {
3         if (n <= 1) {
4             return n;
5         }
6         return fibonacci(n - 1) + fibonacci(n - 2);
7     }
8
9     public static void main(String[] args) {
10        int n = 10;
11        System.out.print("First " + n + " terms: ");
12        for (int i = 0; i < n; i++) {
13            System.out.print(fibonacci(i) + " + ");
14        }
15    }
16
17 }
```

Windows PowerShell  
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PS D:\java\sixth\_semester\basic\_problem\_java> & 'C:\Users\Wajmul Shaon\AppData\Local\Programs\F\clipse Adoptium\jdk-17.0.5.8-hotspot\bin\java.exe' '-XX:+ShowCodeDetailsInExceptionMessages' '-cp' 'C:\Users\Wajmul Shaon\AppData\Roaming\Code\User\workspaceStorage\6c465e7cb2df778bb23dbb71b787ec8f\redhat.java\jdt\_ws\basic\_problem\_java\_2760c38d\bin' 'Fibonacci'

First 10 terms: 0 + 1 + 1 + 2 + 3 + 5 + 8 + 13 + 21 + 34 +

PS D:\java\sixth\_semester\basic\_problem\_java>