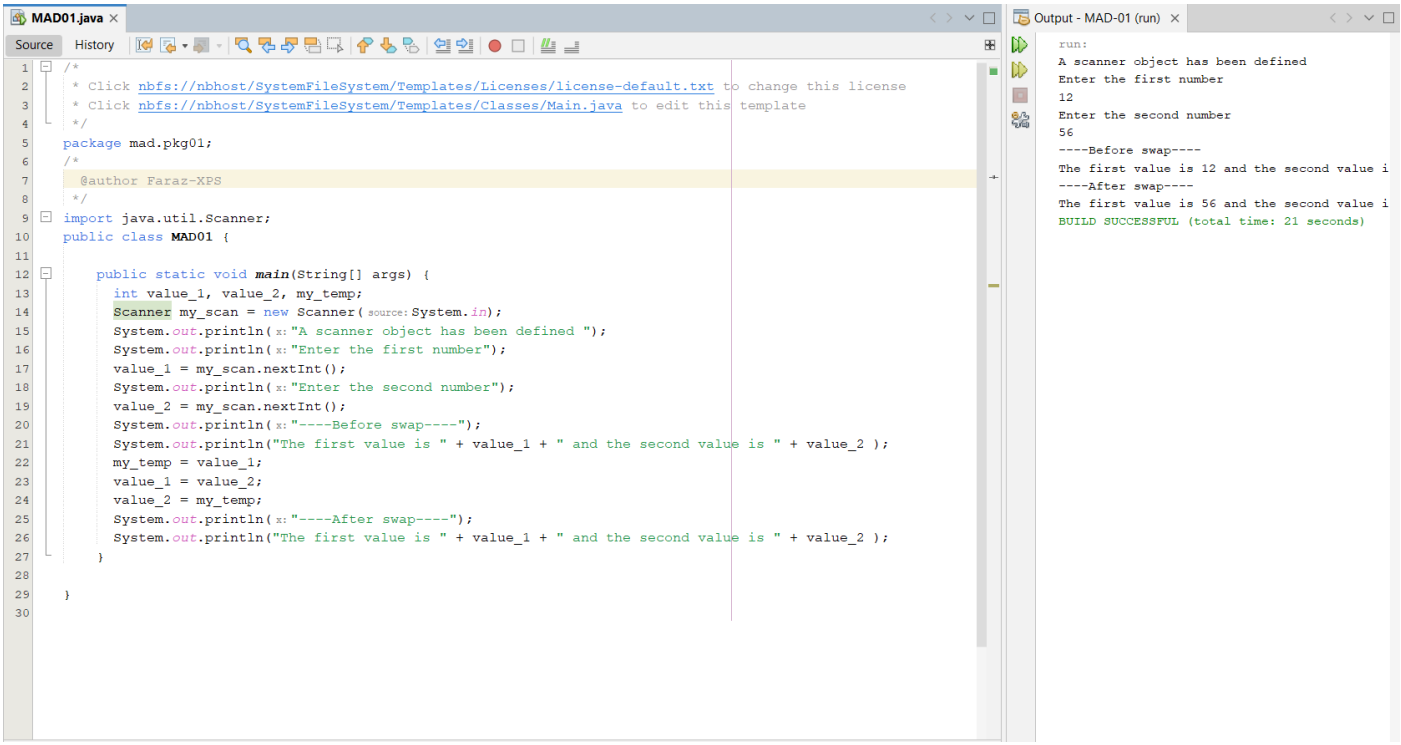
Malik Faraz Mehmood
19011598-099
7th – “B”
Assignment - 01

Mobile Application Development

1. **Write a program in Java to swap two numbers.**



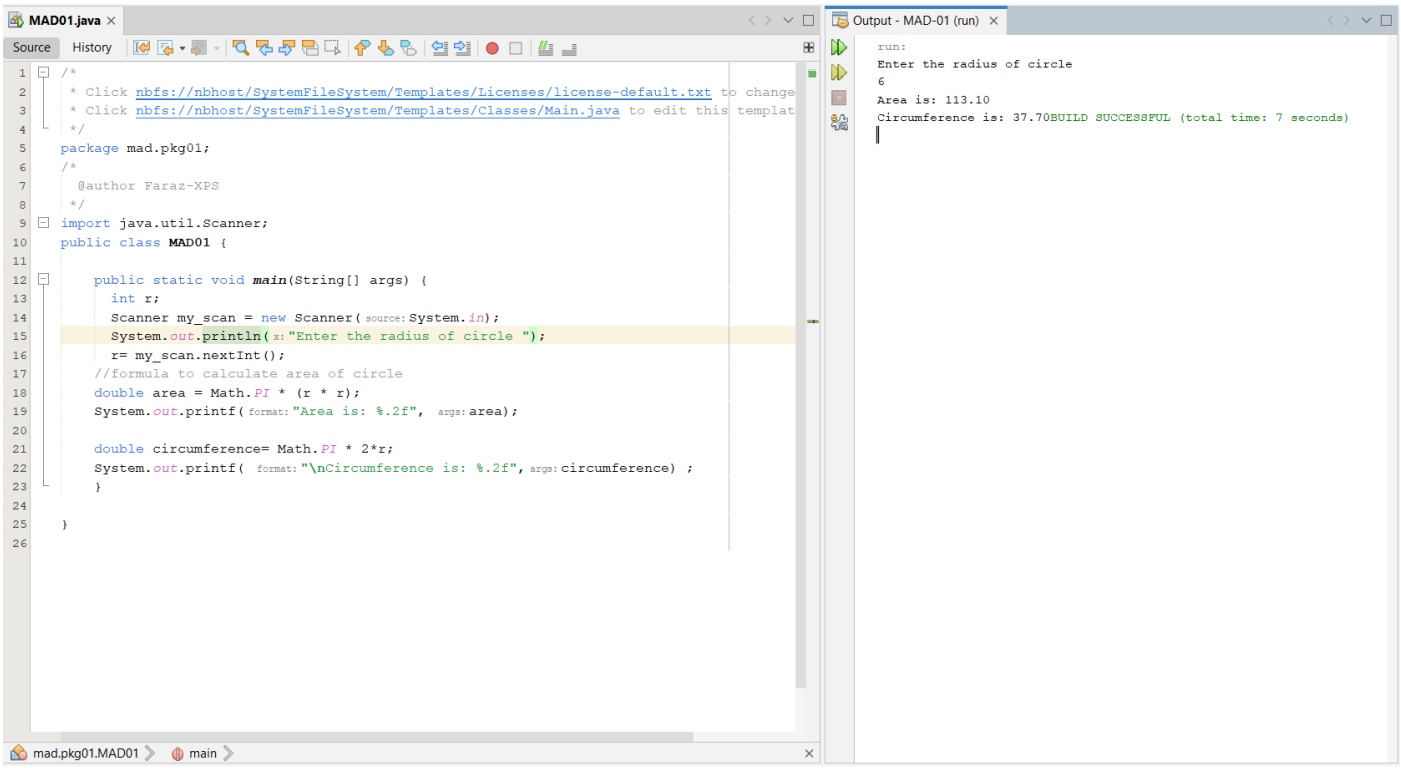
```
/*
 * Click nbfs://nbhost/SystemFileSystem/Templates/Licenses/license-default.txt to change this license
 * Click nbfs://nbhost/SystemFileSystem/Templates/Classes/Main.java to edit this template
 */
package mad.pkg01;
/*
  @author Faraz-XPS
 */
import java.util.Scanner;
public class MAD01 {

    public static void main(String[] args) {
      int value_1, value_2, my_temp;
      Scanner my_scan = new Scanner( source: System.in);
      System.out.println( x: "A scanner object has been defined ");
      System.out.println( x: "Enter the first number");
      value_1 = my_scan.nextInt();
      System.out.println( x: "Enter the second number");
      value_2 = my_scan.nextInt();
      System.out.println( x: "----Before swap----");
      System.out.println("The first value is " + value_1 + " and the second value is " + value_2 );
      my_temp = value_1;
      value_1 = value_2;
      value_2 = my_temp;
      System.out.println( x: "----After swap----");
      System.out.println("The first value is " + value_1 + " and the second value is " + value_2 );
    }

}
```

```
run:
A scanner object has been defined
Enter the first number
12
Enter the second number
56
----Before swap----
The first value is 12 and the second value i
----After swap----
The first value is 56 and the second value i
BUILD SUCCESSFUL (total time: 21 seconds)
```

2. **Write a program in Java to find the area and circumference of a circle.**



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 */
package mad.pkg01;
/*
  @author Faraz-XPS
 */
import java.util.Scanner;
public class MAD01 {

    public static void main(String[] args) {
      int r;
      Scanner my_scan = new Scanner( source: System.in);
      System.out.println( x: "Enter the radius of circle ");
      r= my_scan.nextInt();
    //formula to calculate area of circle
    double area = Math.PI * (r * r);
    System.out.printf( format: "Area is: %.2f",  args: area);

    double circumference= Math.PI * 2*r;
    System.out.printf(  format: "\nCircumference is: %.2f", args: circumference) ;
    }

}
```

```
run:
Enter the radius of circle
6
Area is: 113.10
Circumference is: 37.70BUILD SUCCESSFUL (total time: 7 seconds)
```

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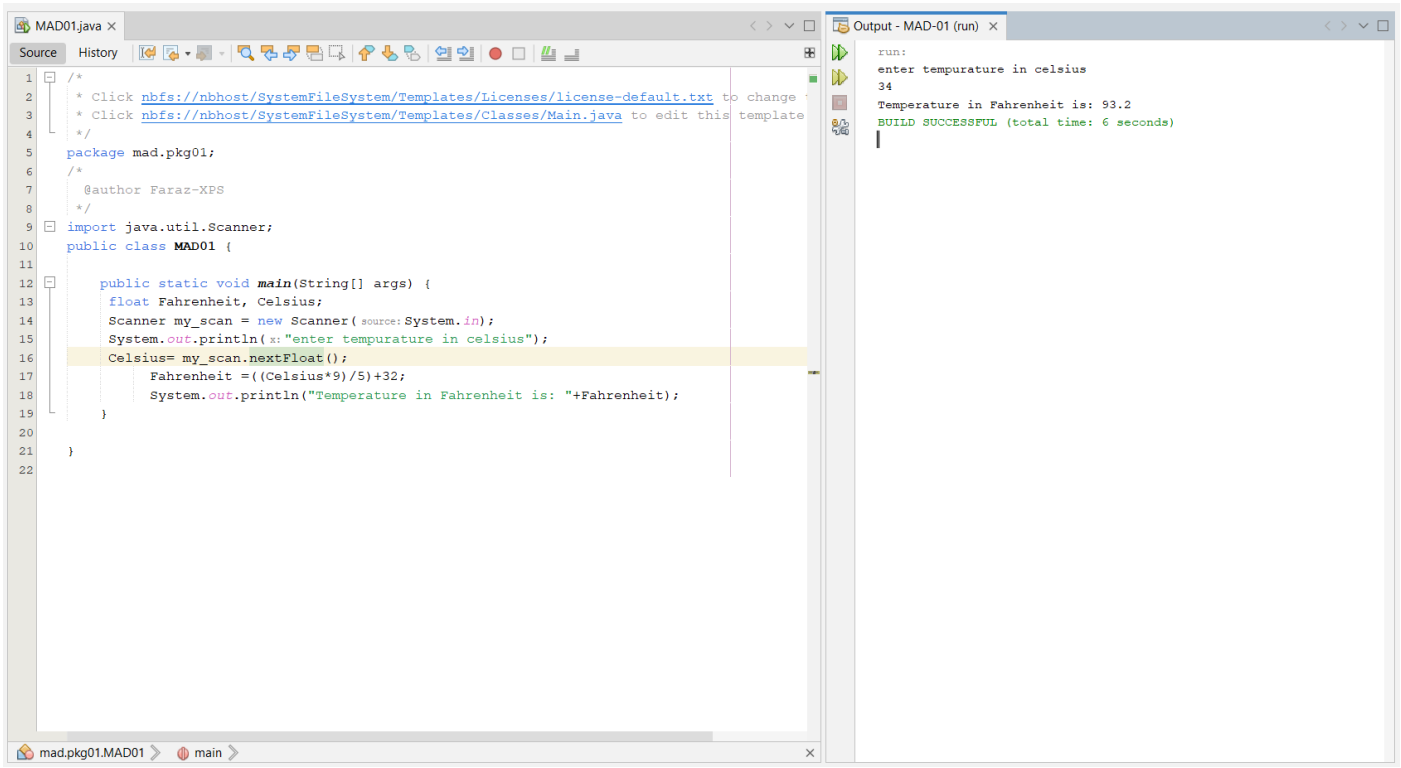
TECH LEGION

3. Write a program in Java to convert temperature in Celsius to Fahrenheit.



```
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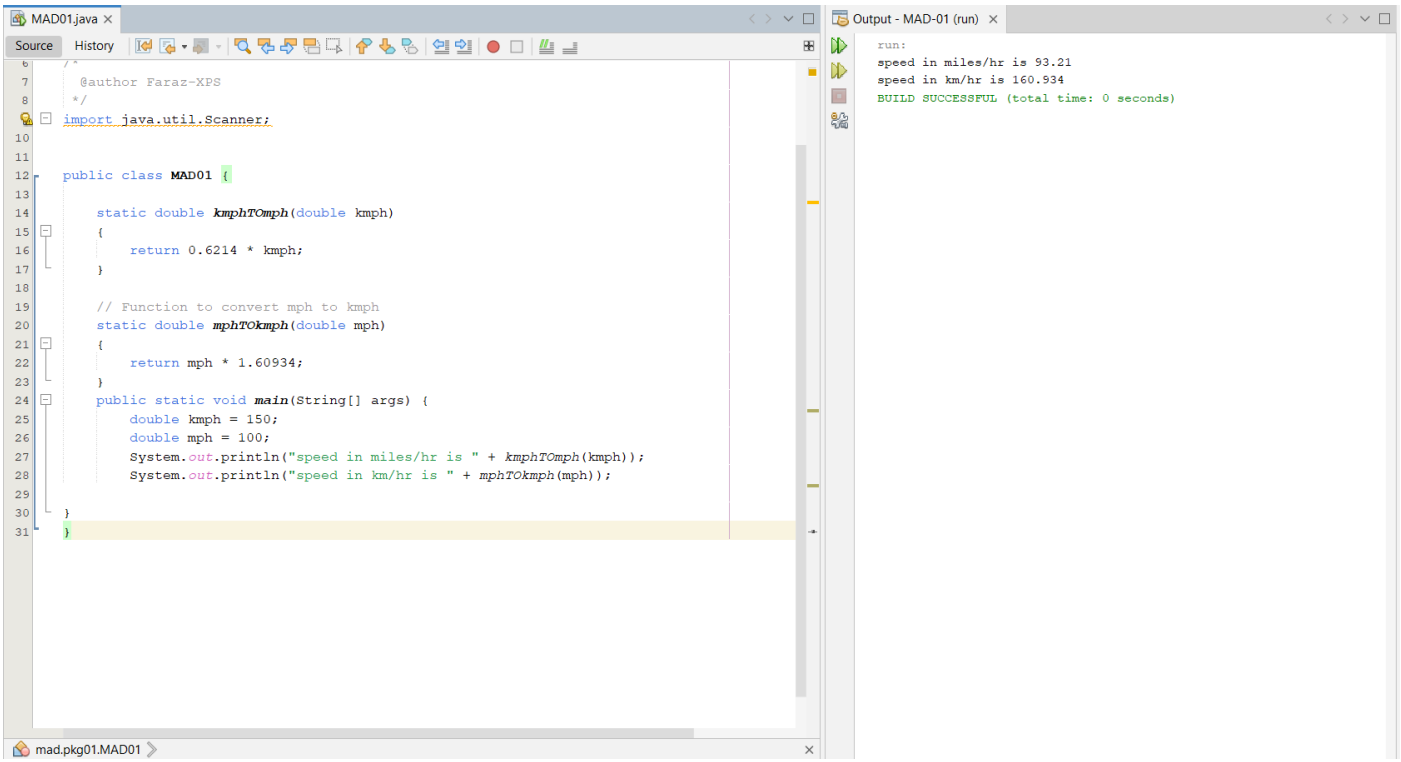
 */
package mad.pkg01;
/*
  @author Faraz-XPS
 */
import java.util.Scanner;
public class MAD01 {

    public static void main(String[] args) {
     float Fahrenheit, Celsius;
     Scanner my_scan = new Scanner( source: System.in);
     System.out.println( x: "enter tempurature in celsius");
     Celsius= my_scan.nextFloat();
          Fahrenheit =((Celsius*9)/5)+32;
          System.out.println("Temperature in Fahrenheit is: "+Fahrenheit);
    }

}
```

```
run:
enter tempurature in celsius
34
Temperature in Fahrenheit is: 93.2
BUILD SUCCESSFUL (total time: 6 seconds)
```

4. Write a program in Java that converts kilometers per hour to miles per hour.



```
/*
  @author Faraz-XPS
 */
import java.util.Scanner;


public class MAD01 {

    static double kmphTOmph(double kmph)
    {
        return 0.6214 * kmph;
    }

    // Function to convert mph to kmph
    static double mphTOkmph(double mph)
    {
        return mph * 1.60934;
    }
    public static void main(String[] args) {
        double kmph = 150;
        double mph = 100;
        System.out.println("speed in miles/hr is " + kmphTOmph(kmph));
        System.out.println("speed in km/hr is " + mphTOkmph(mph));

}
}
```

```
run:
speed in miles/hr is 93.21
speed in km/hr is 160.934
BUILD SUCCESSFUL (total time: 0 seconds)
```

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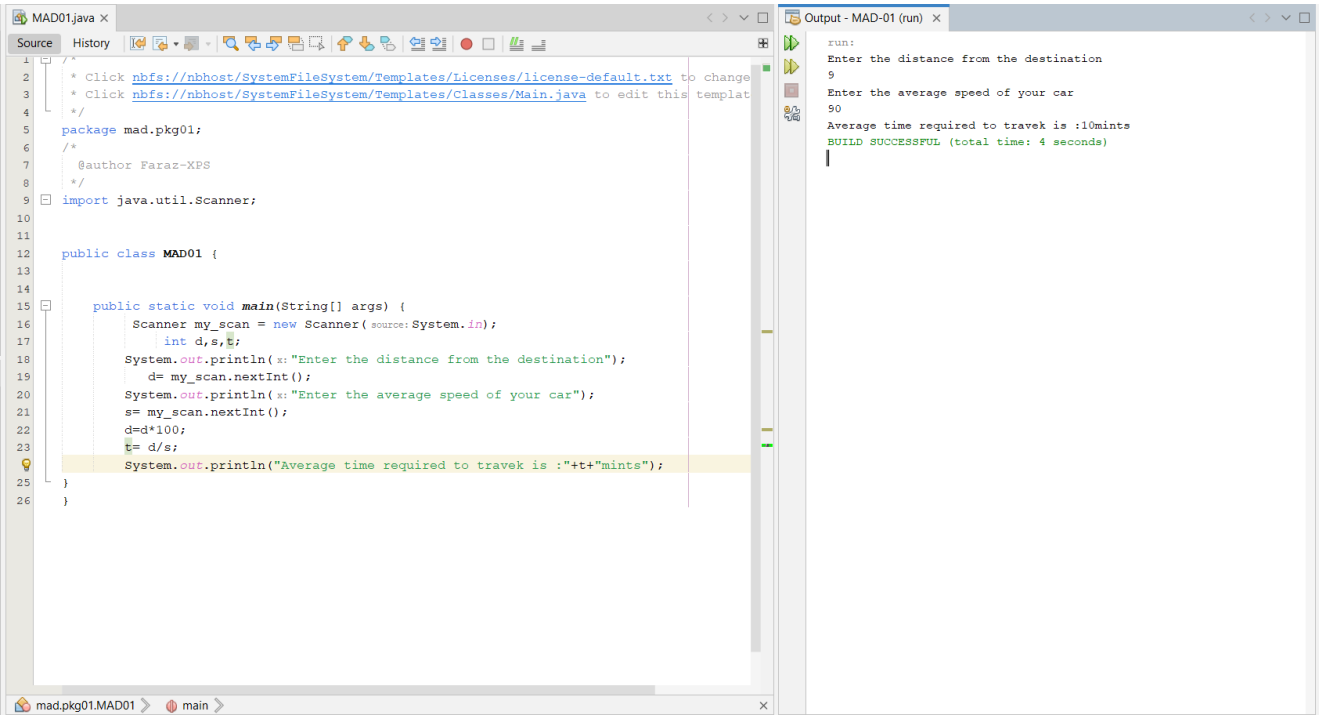
TECH LEGION

5. **Write a program that inputs the distance traveled and speed of vehicle. It calculates the time taken to reach its destination and print it.**



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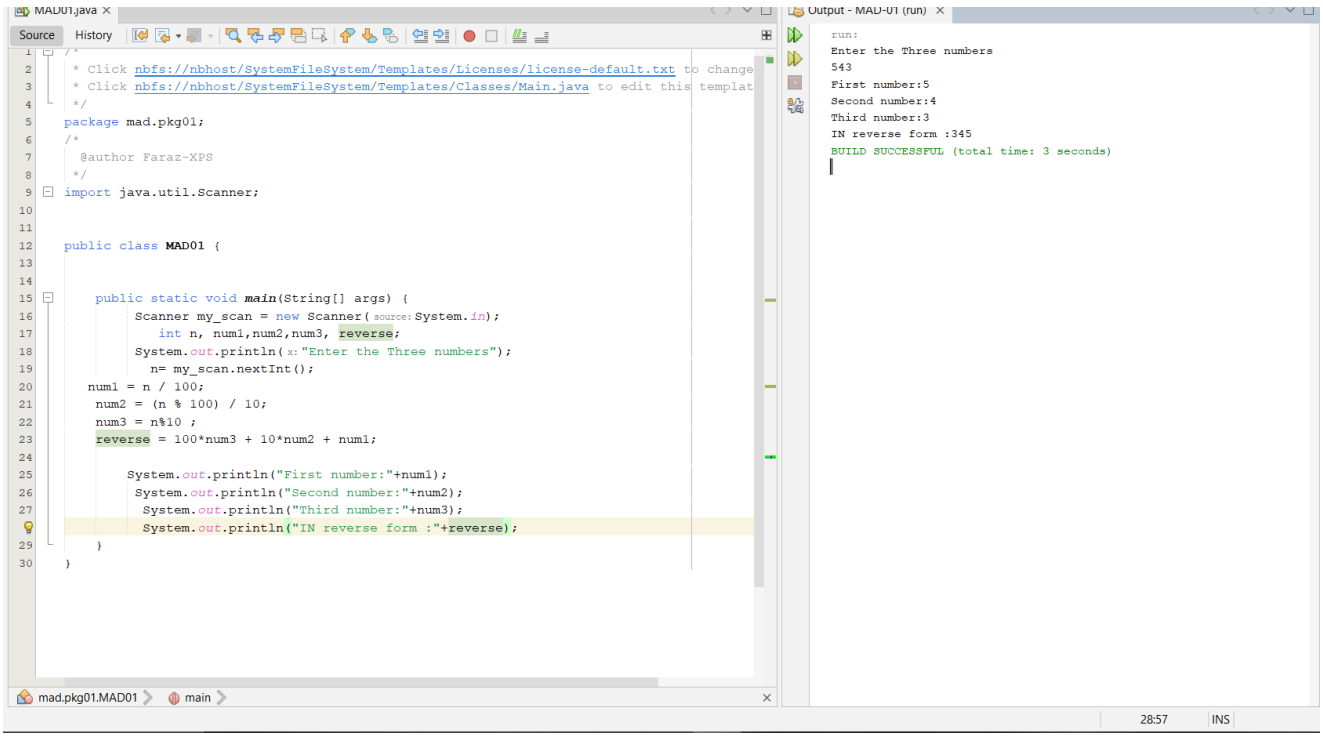
/*
  @author Faraz-XPS
 */
import java.util.Scanner;


public class MAD01 {


    public static void main(String[] args) {
         Scanner my_scan = new Scanner( source: System.in);
             int d,s,t;
        System.out.println( x: "Enter the distance from the destination");
           d= my_scan.nextInt();
        System.out.println( x: "Enter the average speed of your car");
        s= my_scan.nextInt();
        d=d*100;
        t= d/s;
        System.out.println("Average time required to travek is :"+t+"mints");
    }
    }
```

```
run:
Enter the distance from the destination
9
Enter the average speed of your car
90
Average time required to travek is :10mints
BUILD SUCCESSFUL (total time: 4 seconds)
```

6. **Write a program that takes a 3-digit number from user and display the reverse of that number. For example, if user enters 123, then the program should display 321**



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/*
  @author Faraz-XPS
 */
import java.util.Scanner;

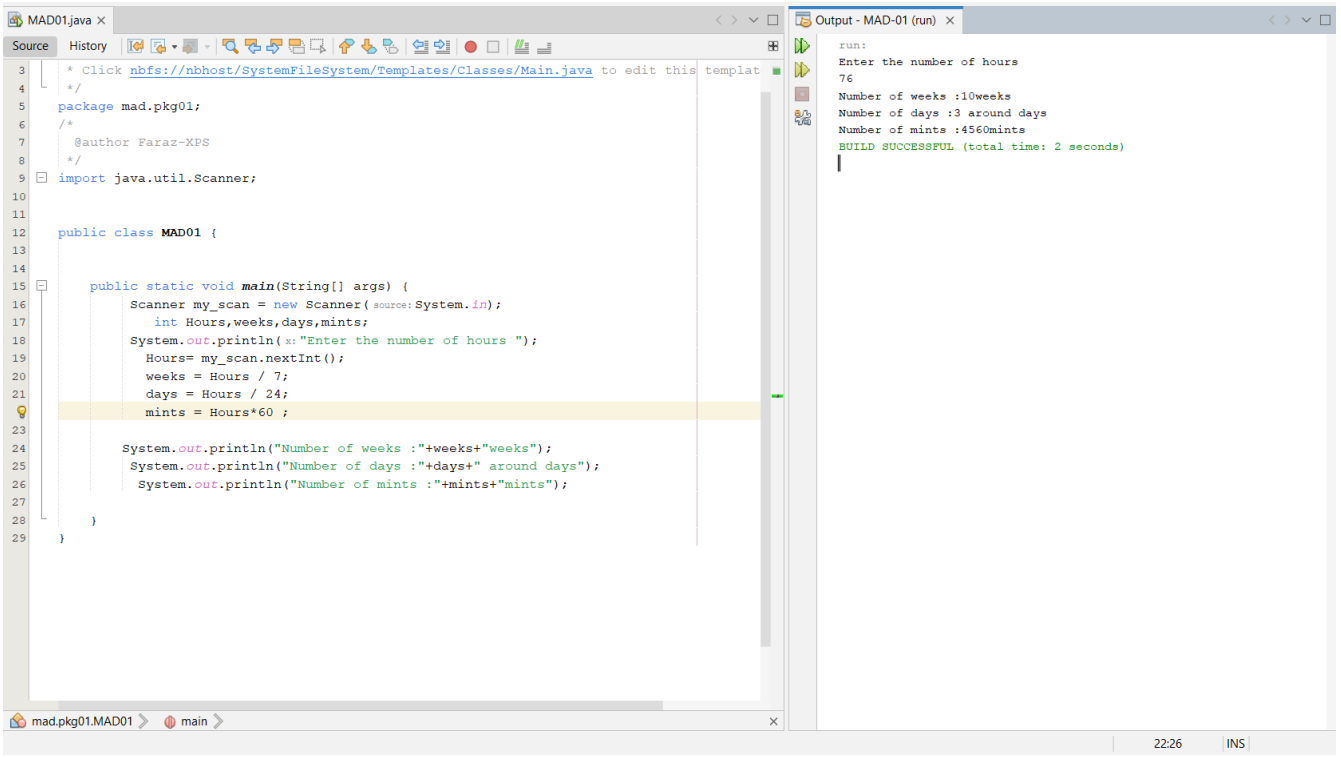

public class MAD01 {


    public static void main(String[] args) {
         Scanner my_scan = new Scanner( source: System.in);
            int n, num1,num2,num3, reverse;
         System.out.println( x: "Enter the Three numbers");
           n= my_scan.nextInt();
    num1 = n / 100;
     num2 = (n % 100) / 10;
     num3 = n%10 ;
     reverse = 100*num3 + 10*num2 + num1;

        System.out.println("First number:"+num1);
         System.out.println("Second number:"+num2);
          System.out.println("Third number:"+num3);
          System.out.println("IN reverse form :"+reverse);
    }
}
```

```
run:
Enter the Three numbers
543
First number:5
Second number:4
Third number:3
IN reverse form :345
BUILD SUCCESSFUL (total time: 3 seconds)
```

7. Write a program that will prompt the user to enter number of hours. Your program should display the number of weeks, days and hours within the input number of hours.



```
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 */
package mad.pkg01;
/*
  @author Faraz-XPS
 */
import java.util.Scanner;


public class MAD01 {

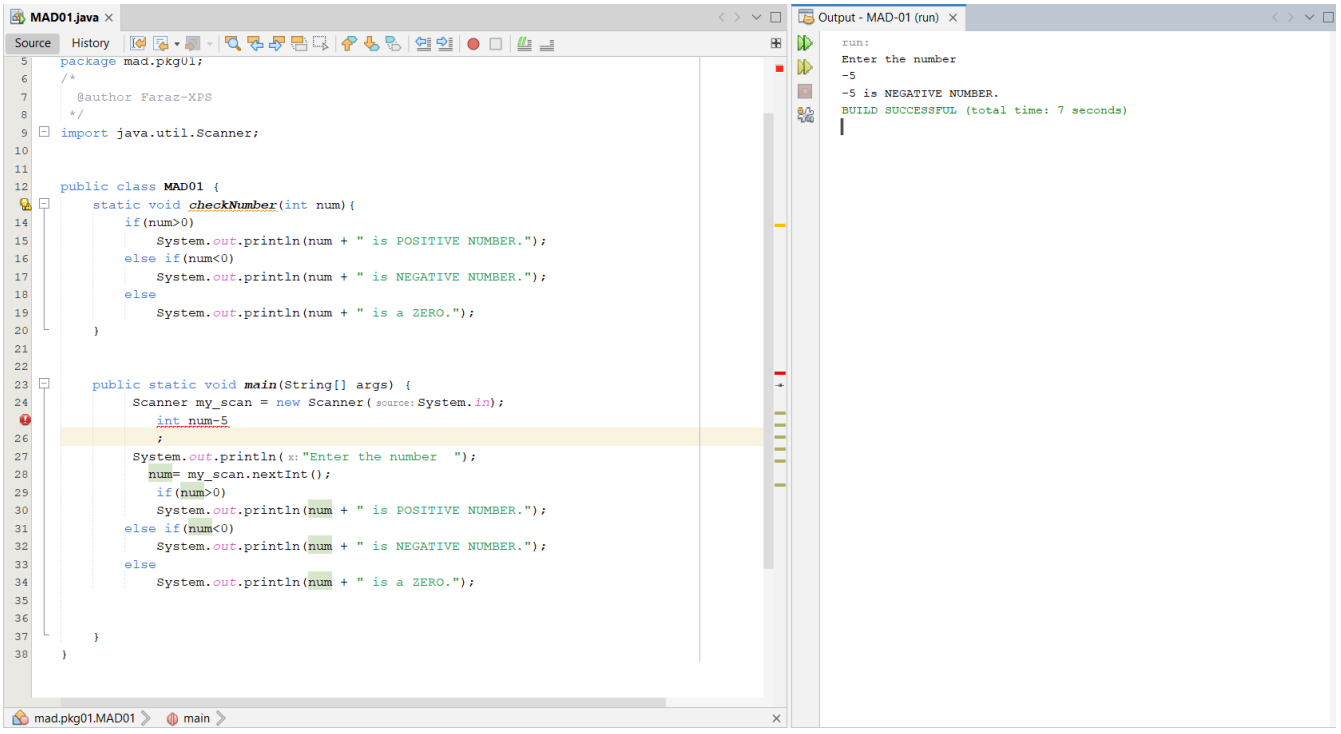

    public static void main(String[] args) {
         Scanner my_scan = new Scanner( source: System.in);
            int Hours,weeks,days,mints;
         System.out.println( x: "Enter the number of hours ");
           Hours= my_scan.nextInt();
           weeks = Hours / 7;
           days = Hours / 24;
           mints = Hours*60 ;

        System.out.println("Number of weeks :"+weeks+"weeks");
         System.out.println("Number of days :"+days+" around days");
          System.out.println("Number of mints :"+mints+"mints");

    }
}
```

```
run:
Enter the number of hours
76
Number of weeks :10weeks
Number of days :3 around days
Number of mints :4560mints
BUILD SUCCESSFUL (total time: 2 seconds)
```

8. Write a program in Java to check whether a number is positive, negative or zero.



```
package mad.pkg01;
/*
  @author Faraz-XPS
 */
import java.util.Scanner;


public class MAD01 {
    static void checkNumber(int num){
        if(num>0)
            System.out.println(num + " is POSITIVE NUMBER.");
        else if(num<0)
            System.out.println(num + " is NEGATIVE NUMBER.");
        else
            System.out.println(num + " is a ZERO.");
    }


    public static void main(String[] args) {
         Scanner my_scan = new Scanner( source: System.in);
            int num-5
            ;
         System.out.println( x: "Enter the number  ");
           num= my_scan.nextInt();
            if(num>0)
            System.out.println(num + " is POSITIVE NUMBER.");
        else if(num<0)
            System.out.println(num + " is NEGATIVE NUMBER.");
        else
            System.out.println(num + " is a ZERO.");


    }
}
```

```
run:
Enter the number
-5
-5 is NEGATIVE NUMBER.
BUILD SUCCESSFUL (total time: 7 seconds)
```

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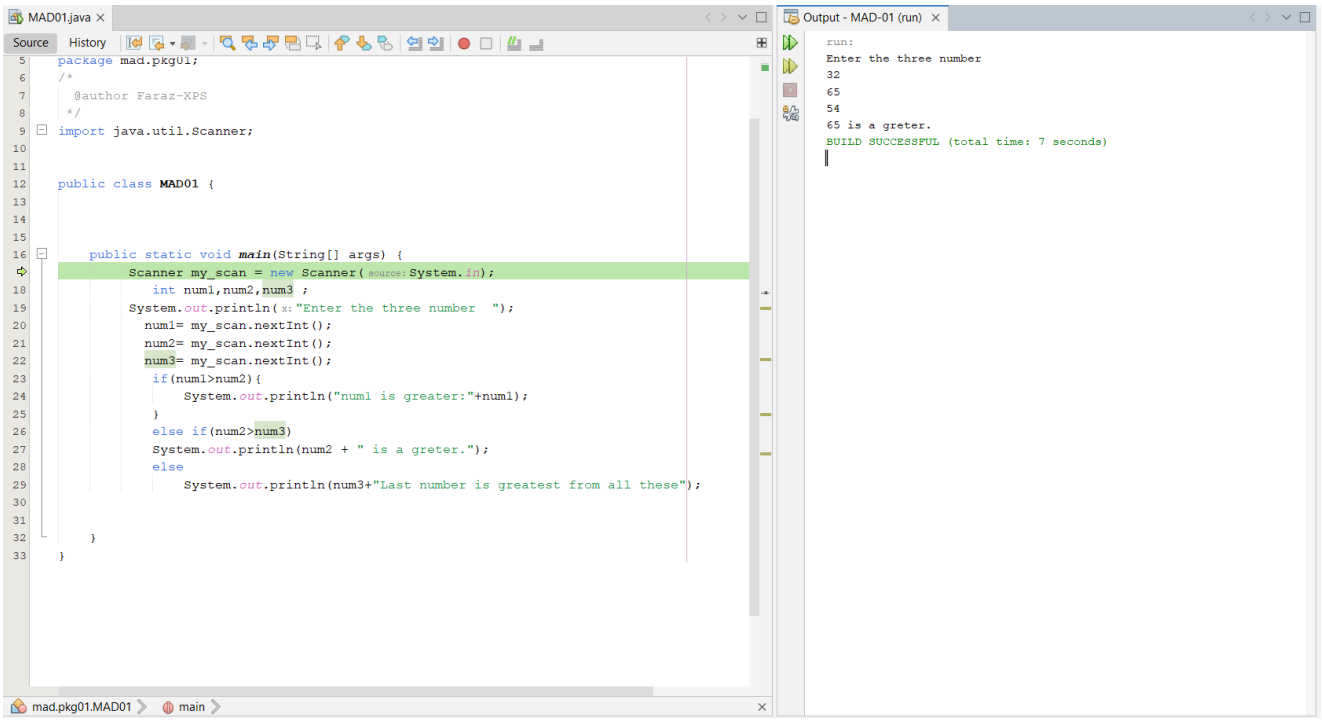
TECH LEGION

9. Write a program that takes 3 numbers from user and find maximum from these numbers.



```
package mad.pkg01;
/*
 @author Faraz-XPS
 */
import java.util.Scanner;


public class MAD01 {

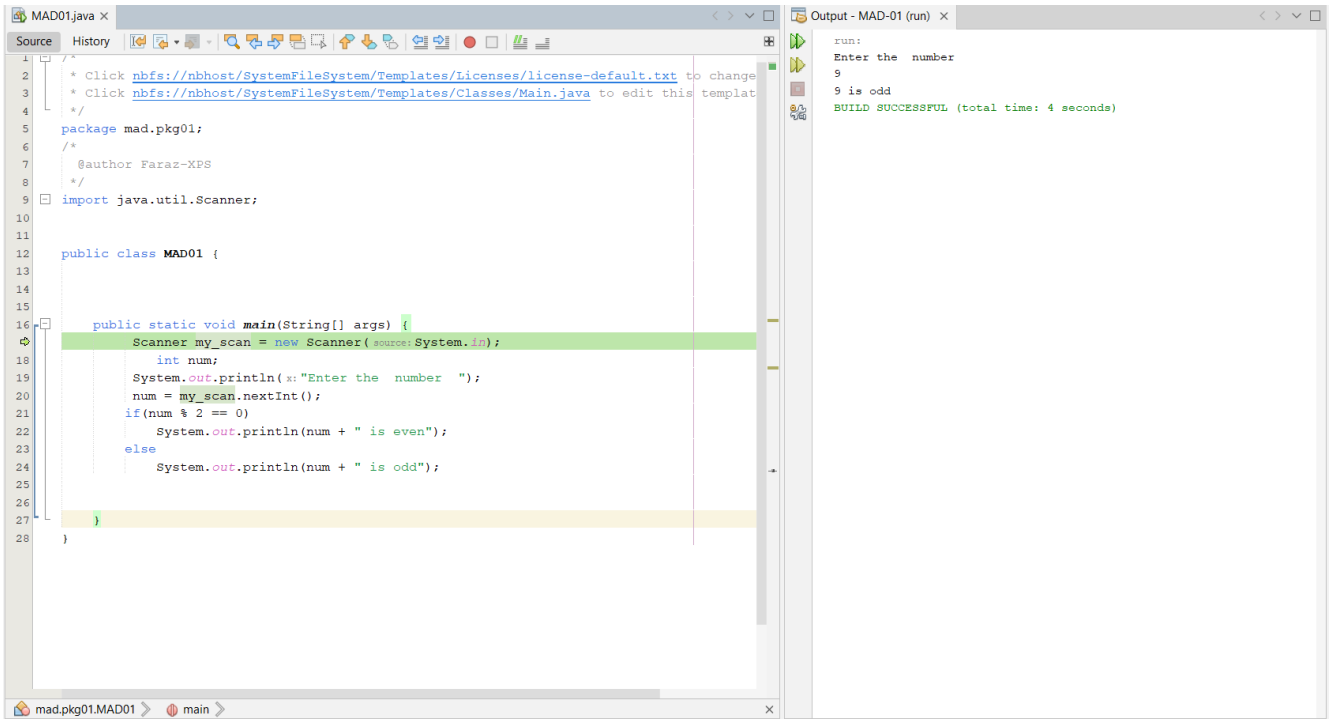


    public static void main(String[] args) {
          Scanner my_scan = new Scanner( source: System.in);
             int num1,num2,num3 ;
          System.out.println( x: "Enter the three number  ");
            num1= my_scan.nextInt();
            num2= my_scan.nextInt();
            num3= my_scan.nextInt();
             if(num1>num2){
                 System.out.println("num1 is greater:"+num1);
             }
             else if(num2>num3)
             System.out.println(num2 + " is a greter.");
             else
                 System.out.println(num3+"Last number is greatest from all these");


    }
}
```

```
run:
Enter the three number
32
65
54
65 is a greter.
BUILD SUCCESSFUL (total time: 7 seconds)
```

10. Write a program that takes a number from user and find whether it is even or odd.



```
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 */
package mad.pkg01;
/*
 @author Faraz-XPS
 */
import java.util.Scanner;


public class MAD01 {



    public static void main(String[] args) {
          Scanner my_scan = new Scanner( source: System.in);
             int num;
          System.out.println( x: "Enter the  number  ");
          num = my_scan.nextInt();
         if(num % 2 == 0)
             System.out.println(num + " is even");
         else
             System.out.println(num + " is odd");


    }
}
```

```
run:
Enter the  number
9
9 is odd
BUILD SUCCESSFUL (total time: 4 seconds)
```

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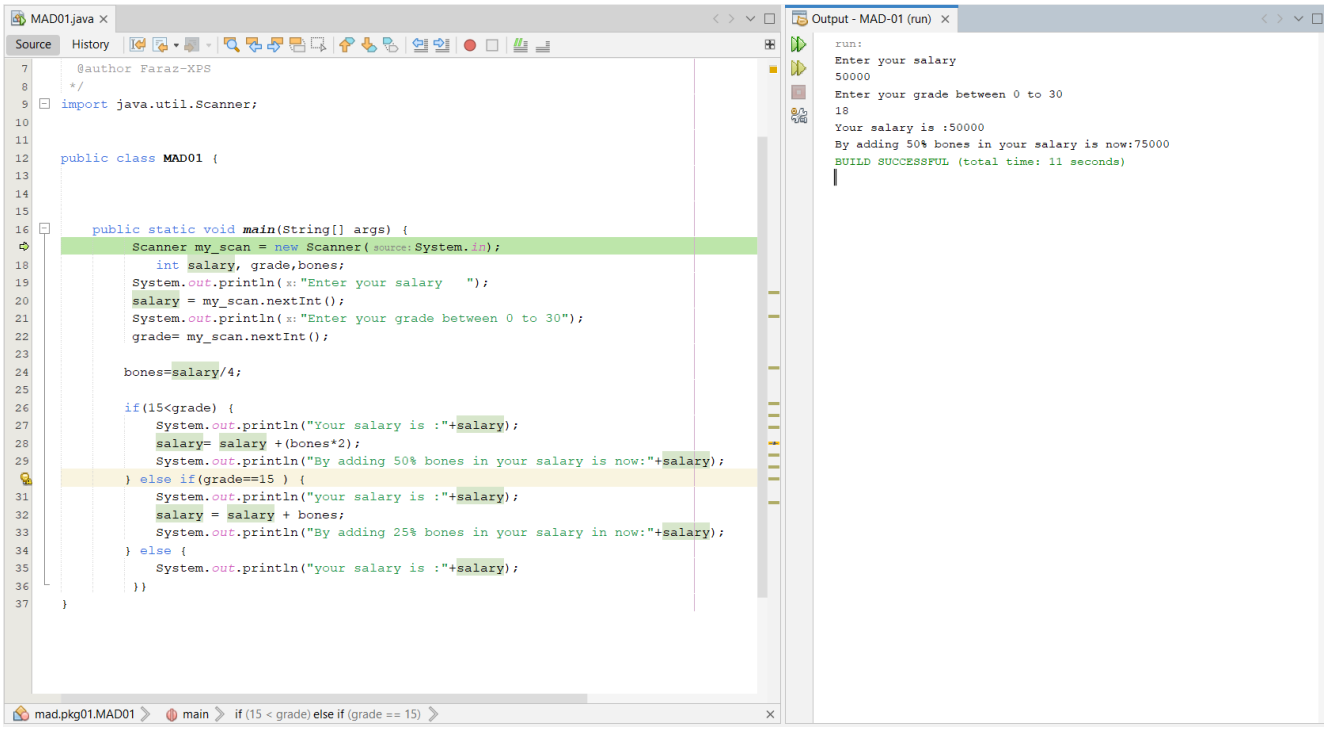
TECH LEGION

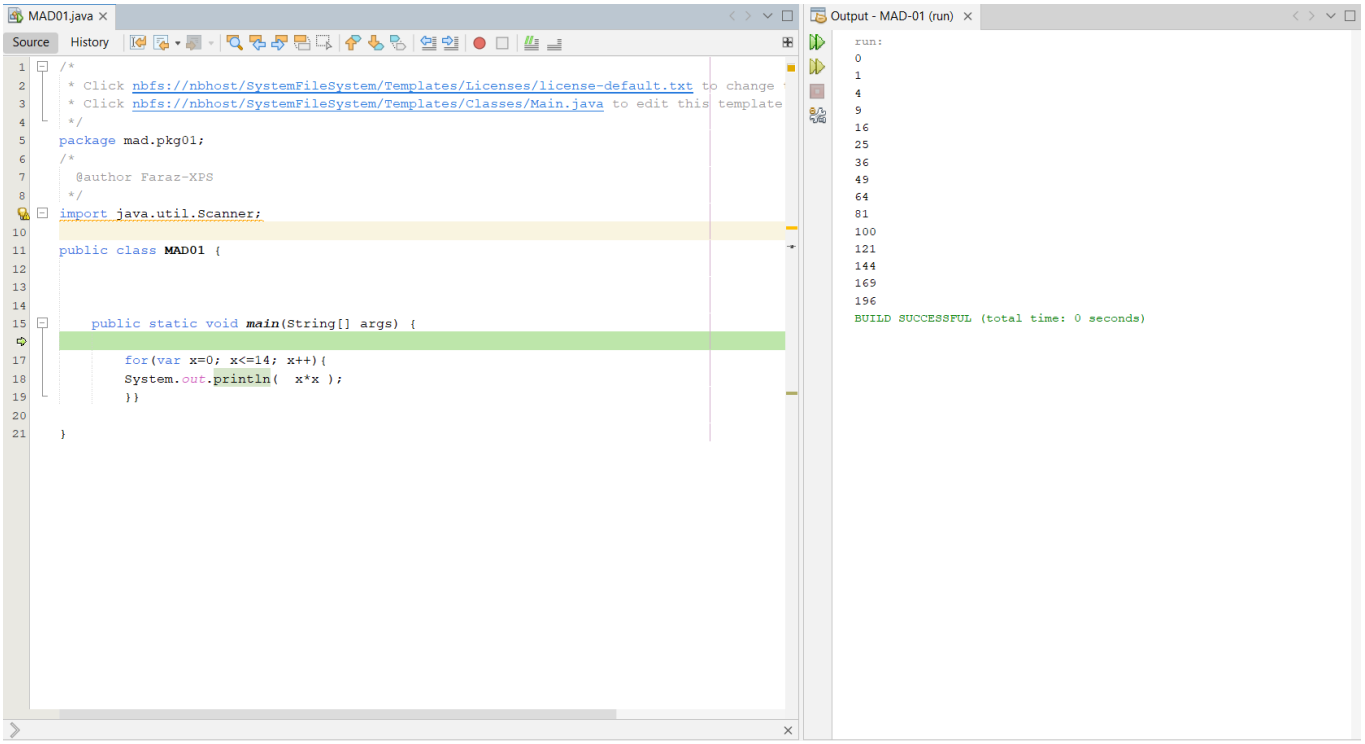
11. Write a program that inputs salary and grade. It adds 50% bonus if the grade is greater than 15. It adds 25% bonus if the grade is 15 or less and then display the total salary.



```
MAD01.java
Source  History
 7      @author Faraz-XPS
 8      */
 9  import java.util.Scanner;
10
11
12  public class MAD01 {
13
14
15
16      public static void main(String[] args) {
17          Scanner my_scan = new Scanner( source: System.in);
18              int salary, grade,bones;
19          System.out.println( x: "Enter your salary   ");
20          salary = my_scan.nextInt();
21          System.out.println( x: "Enter your grade between 0 to 30");
22          grade= my_scan.nextInt();
23
24          bones=salary/4;
25
26          if(15<grade) {
27              System.out.println("Your salary is :"+salary);
28              salary= salary +(bones*2);
29              System.out.println("By adding 50% bones in your salary is now:"+salary);
30          } else if(grade==15 ) {
31              System.out.println("your salary is :"+salary);
32              salary = salary + bones;
33              System.out.println("By adding 25% bones in your salary in now:"+salary);
34          } else {
35              System.out.println("your salary is :"+salary);
36           }}
37  }
mad.pkg01.MAD01 > main > if (15 < grade) else if (grade == 15)

Output - MAD-01 (run)
run:
Enter your salary
50000
Enter your grade between 0 to 30
18
Your salary is :50000
By adding 50% bones in your salary is now:75000
BUILD SUCCESSFUL (total time: 11 seconds)
```

12. Write a program that displays the squares of the numbers from 0 to 14.
Here's the output:
0 1 4 9 16 25 36 49 64 81 100 121 144 169 196



```
MAD01.java
Source  History
 1  /*
 2   * Click nbfs://nbhost/SystemFileSystem/Templates/Licenses/license-default.txt to change
 3   * Click nbfs://nbhost/SystemFileSystem/Templates/Classes/Main.java to edit this template
 4   */
 5  package mad.pkg01;
 6  /*
 7    @author Faraz-XPS
 8   */
 9  import java.util.Scanner;
10
11  public class MAD01 {
12
13
14
15      public static void main(String[] args) {
16
17          for(var x=0; x<=14; x++){
18          System.out.println(  x*x );
19          }}
20
21  }

Output - MAD-01 (run)
run:
0
1
4
9
16
25
36
49
64
81
100
121
144
169
196
BUILD SUCCESSFUL (total time: 0 seconds)
```

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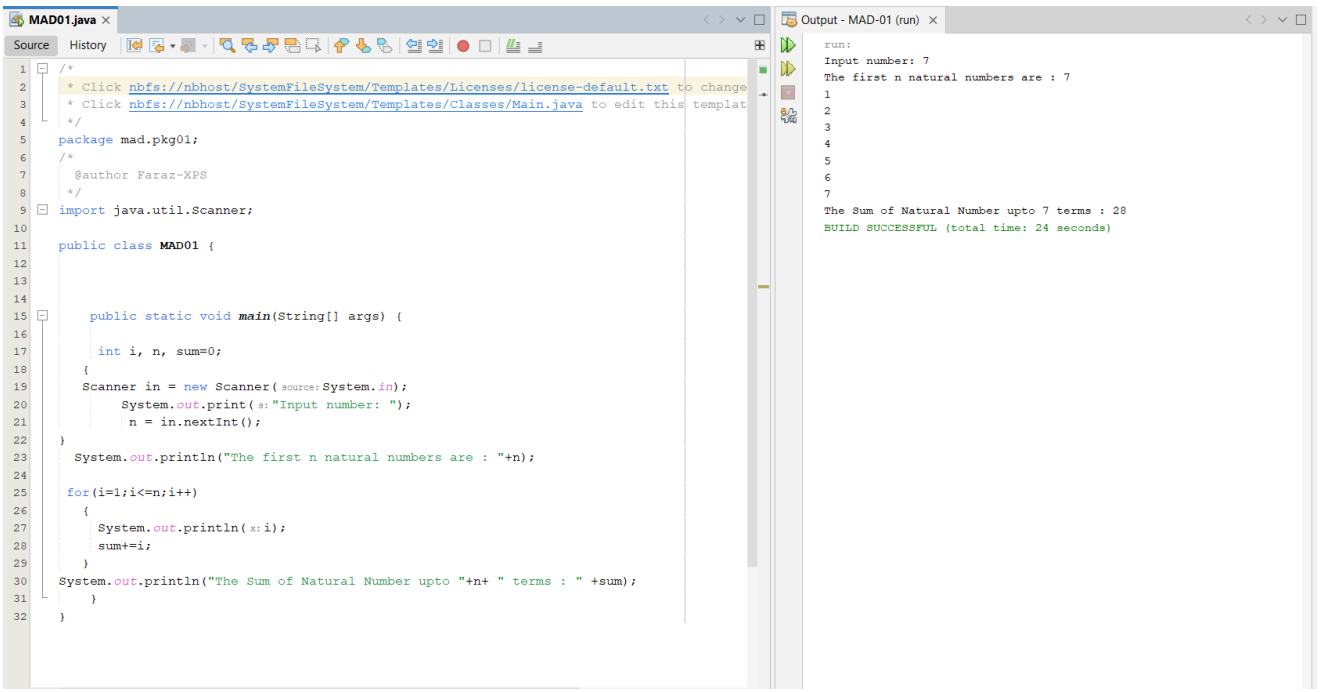
TECH LEGION

13. Write a program in Java to display n terms of natural number and their sum. Sample Output: Input a number of terms: 7 The natural numbers upto 7th terms are: 1 2 3 4 5 6 7 The sum of the natural numbers is: 28.



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 */
package mad.pkg01;
/*
  @author Faraz-XPS
 */
import java.util.Scanner;

public class MAD01 {



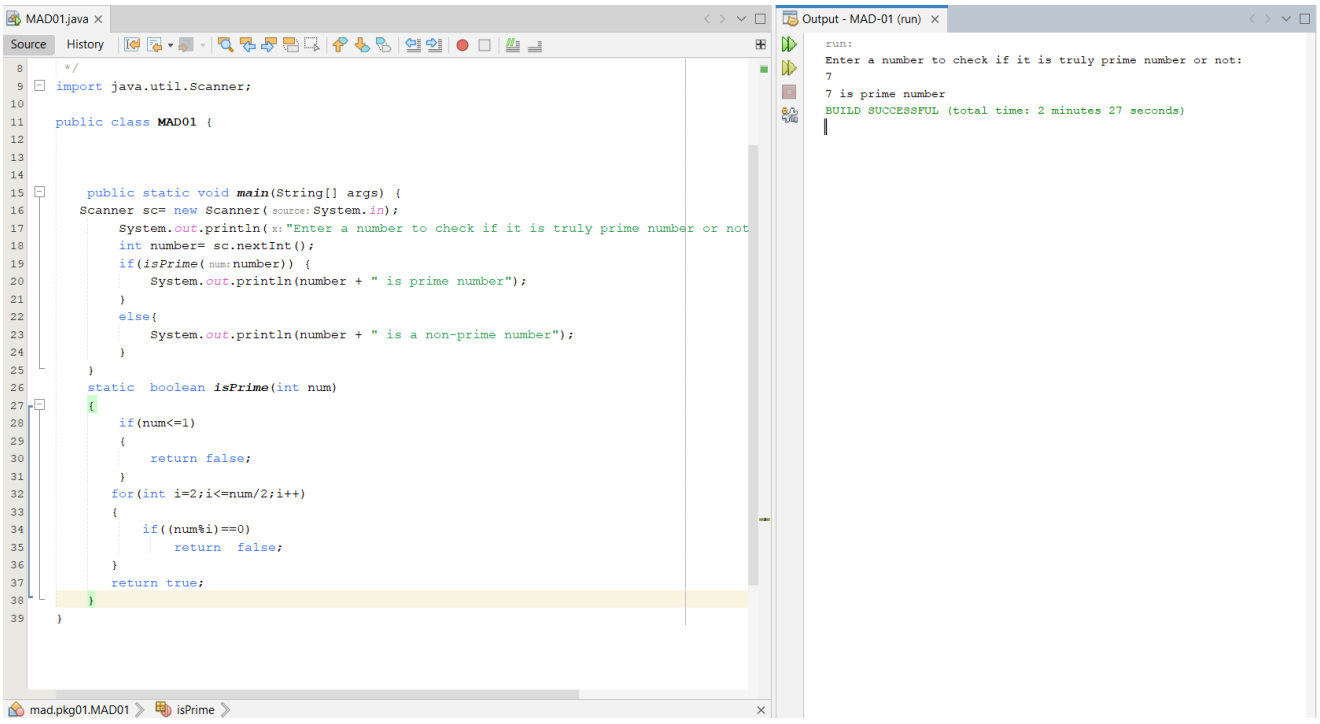
    public static void main(String[] args) {

     int i, n, sum=0;
    {
    Scanner in = new Scanner( source: System.in);
        System.out.print( s: "Input number: ");
         n = in.nextInt();
}
  System.out.println("The first n natural numbers are : "+n);

 for(i=1;i<=n;i++)
   {
    System.out.println( x: i);
    sum+=i;
   }
System.out.println("The Sum of Natural Number upto "+n+ " terms : " +sum);
    }
}
```

```
run:
Input number: 7
The first n natural numbers are : 7
1
2
3
4
5
6
7
The Sum of Natural Number upto 7 terms : 28
BUILD SUCCESSFUL (total time: 24 seconds)
```

14. Write a program in Java to check whether a number is prime or not.



```
 */
import java.util.Scanner;

public class MAD01 {



    public static void main(String[] args) {
   Scanner sc= new Scanner( source: System.in);
        System.out.println( x: "Enter a number to check if it is truly prime number or not
        int number= sc.nextInt();
        if(isPrime( num: number)) {
            System.out.println(number + " is prime number");
        }
        else{
            System.out.println(number + " is a non-prime number");
        }
    }
    static  boolean isPrime(int num)
    {
        if(num<=1)
        {
            return false;
        }
       for(int i=2;i<=num/2;i++)
       {
           if((num%i)==0)
               return  false;
       }
       return true;
    }
}
```

```
run:
Enter a number to check if it is truly prime number or not:
7
7 is prime number
BUILD SUCCESSFUL (total time: 2 minutes 27 seconds)
```

mad.pkg01.MAD01 › isPrime ›

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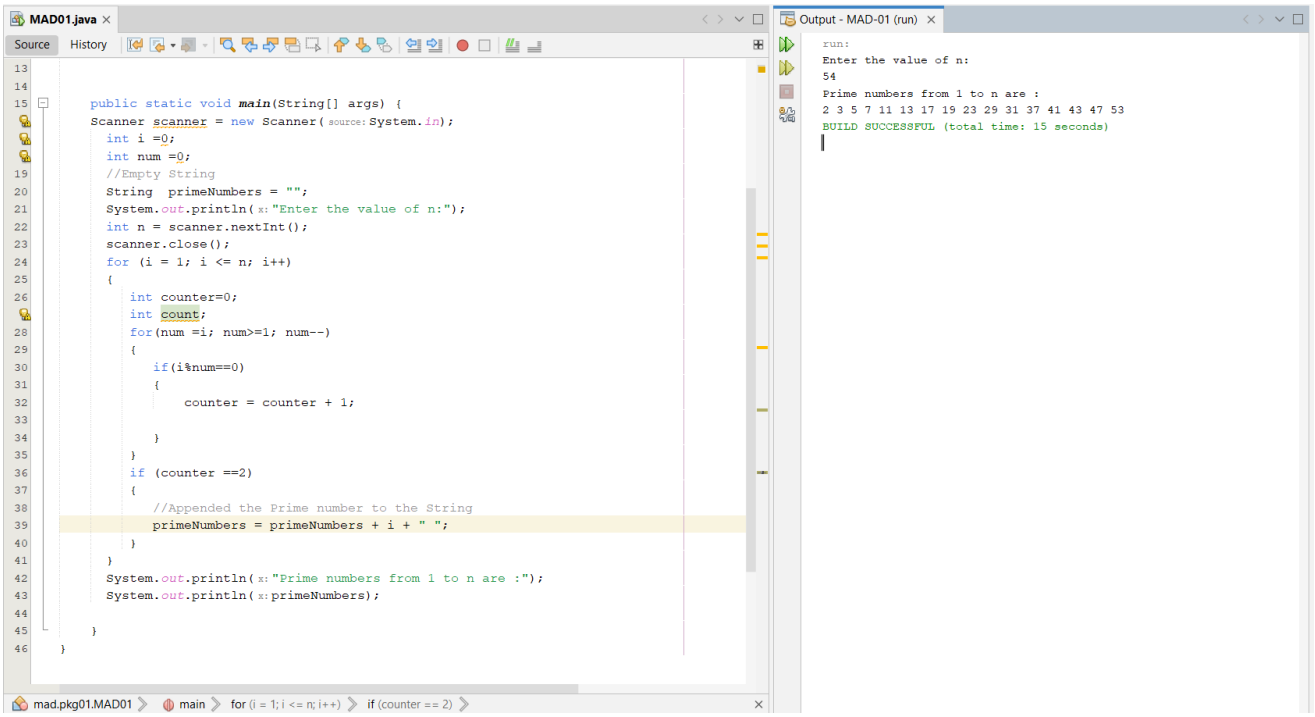
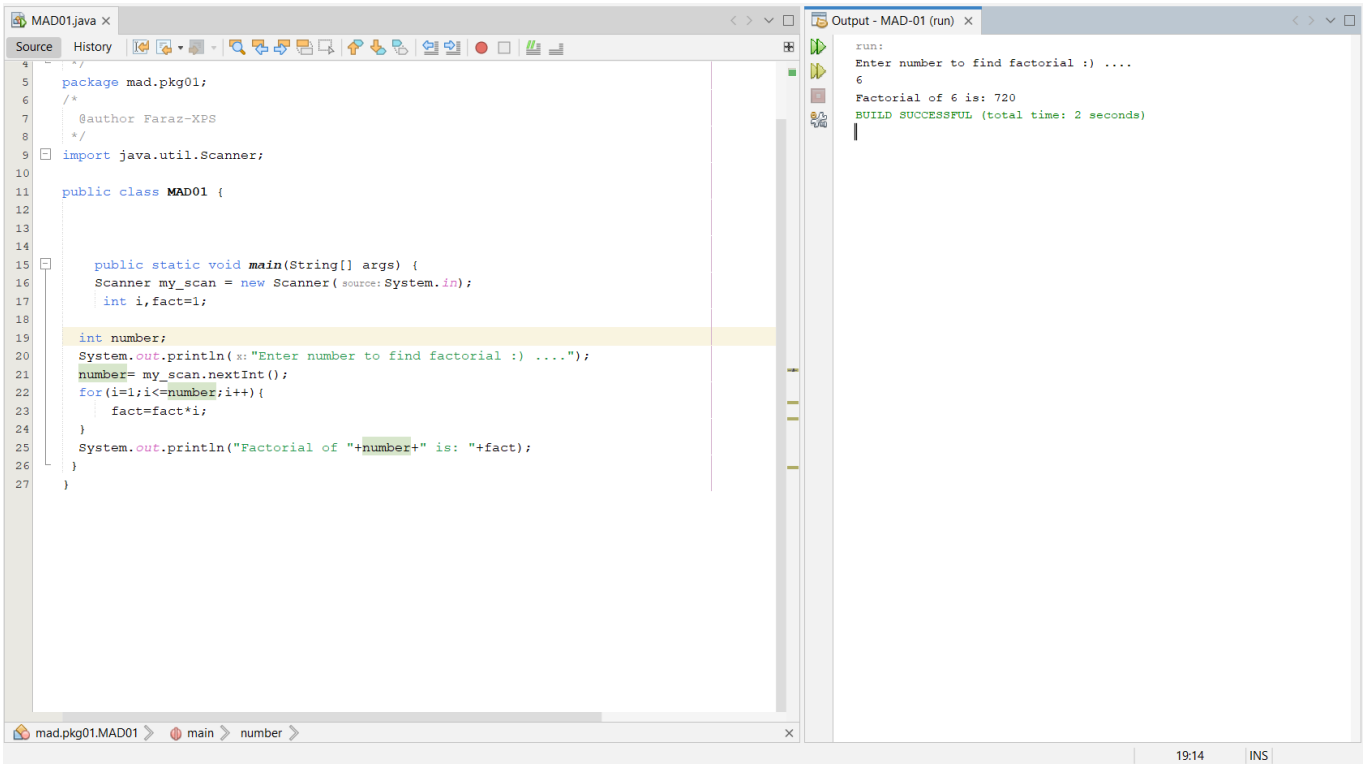
TECH LEGION

15. Write a program in Java to find prime number within a range. Input number for starting range: 1 Input number for ending range: 100 The prime numbers between 1 and 100 are: 2 3 5 7 11 13 17 19 23 29 31 37 41 43 47 53 59 61 67 71 73 79 83 89 97 The total number of prime numbers between 1 to 100 is: 25



16. Write a program in Java to find the factorial of a number.



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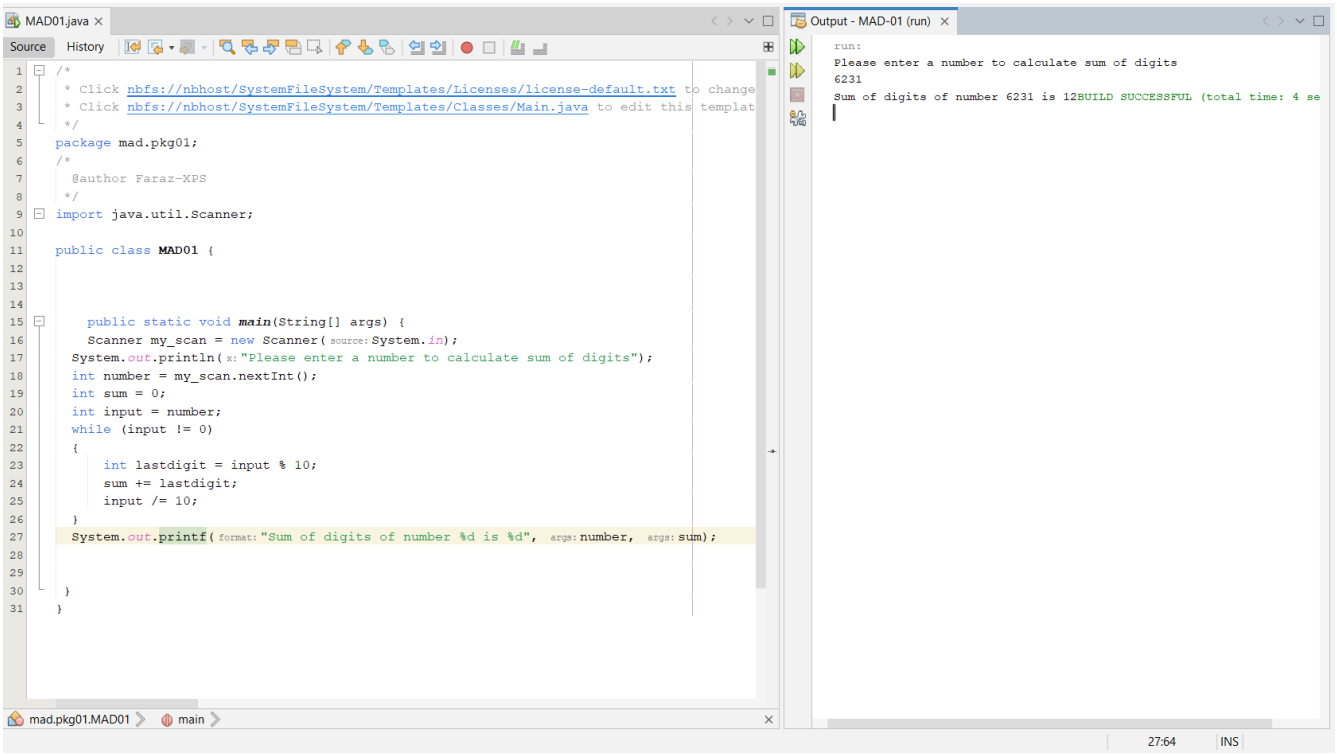
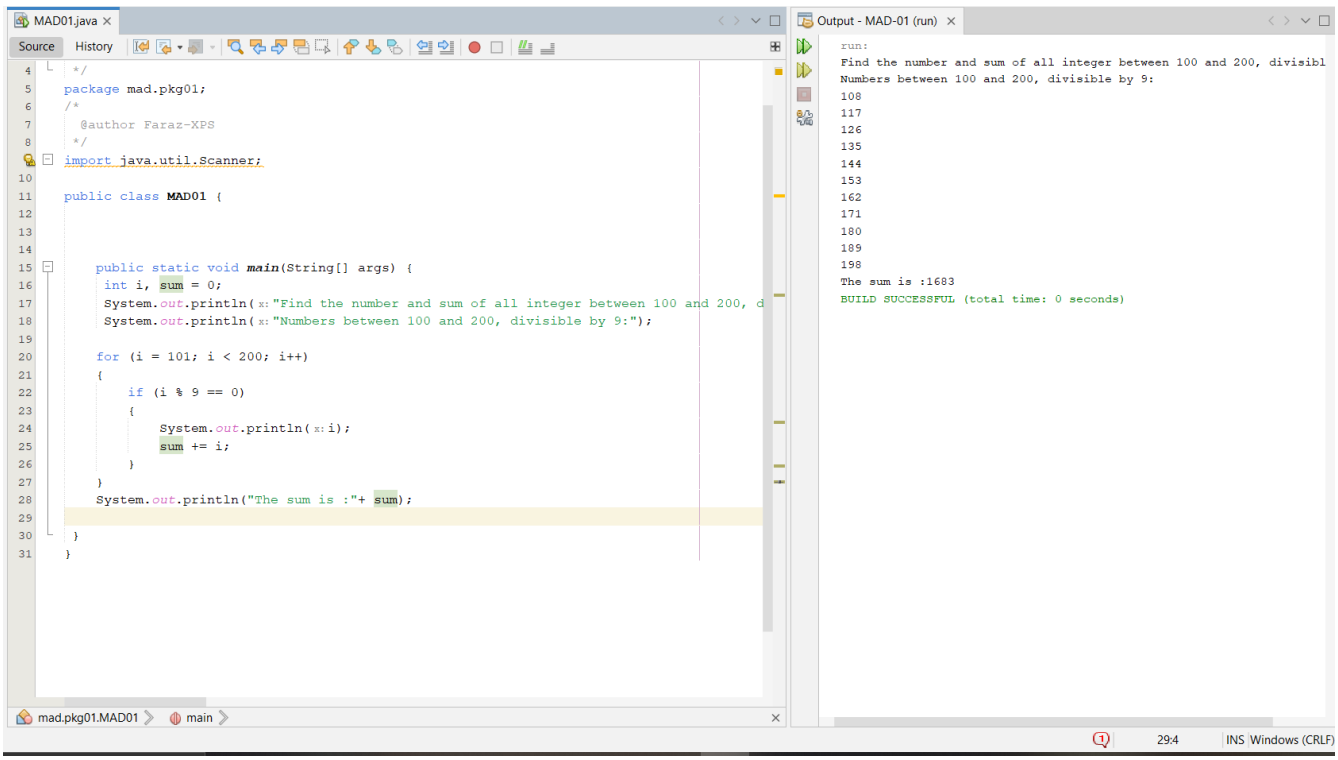
TECH LEGION

17. Write a program in Java to find the sum of digits of a given number. Sample Output: Input a number: 1234 The sum of digits of 1234 is: 10.



18. Write a program in Java to find the number and sum of all integer between 100 and 200 which are divisible by 9. Sample Output: Numbers between 100 and 200, divisible by 9: 108 117 126 135 144 153 162 171 180 189 198 The sum : 1683



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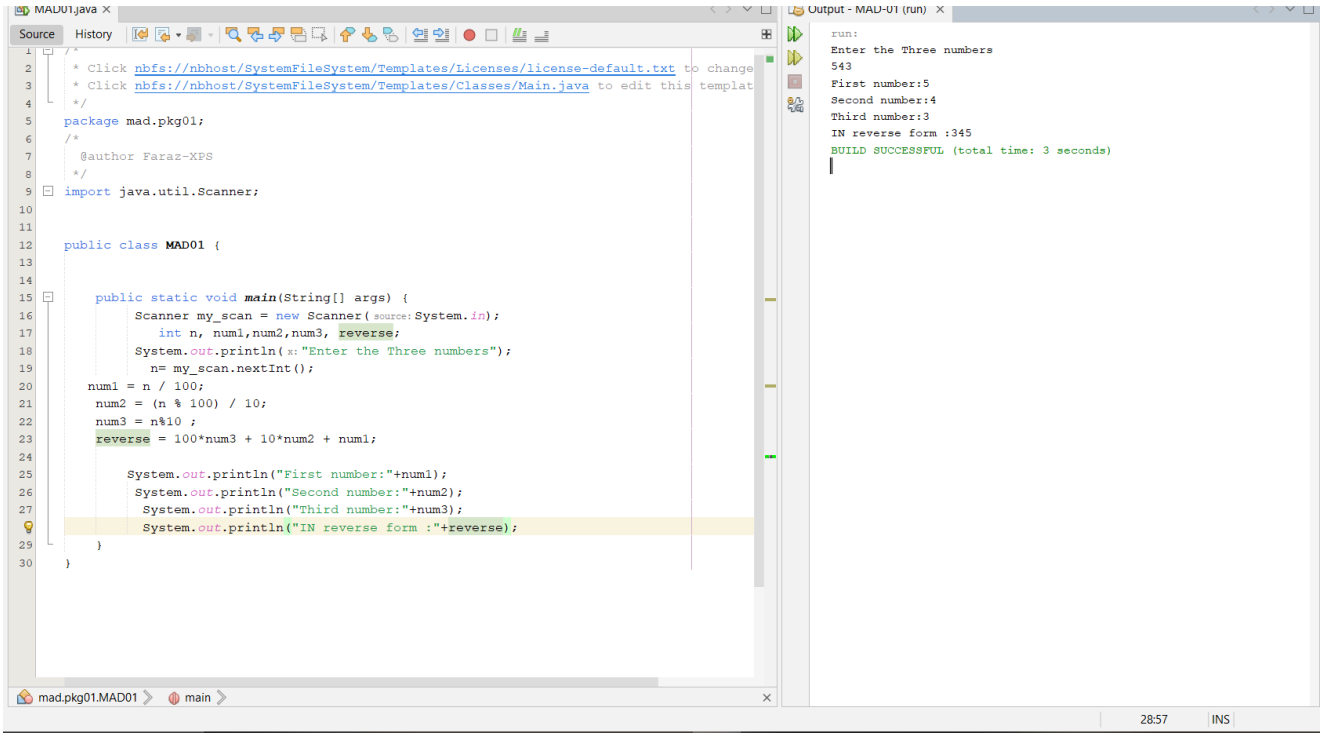
TECH LEGION

19. Write a program in Java to display any number in reverse order. Sample Output: Input a number: 12345 The number in reverse order is : 54321



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  @author Faraz-XPS
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import java.util.Scanner;

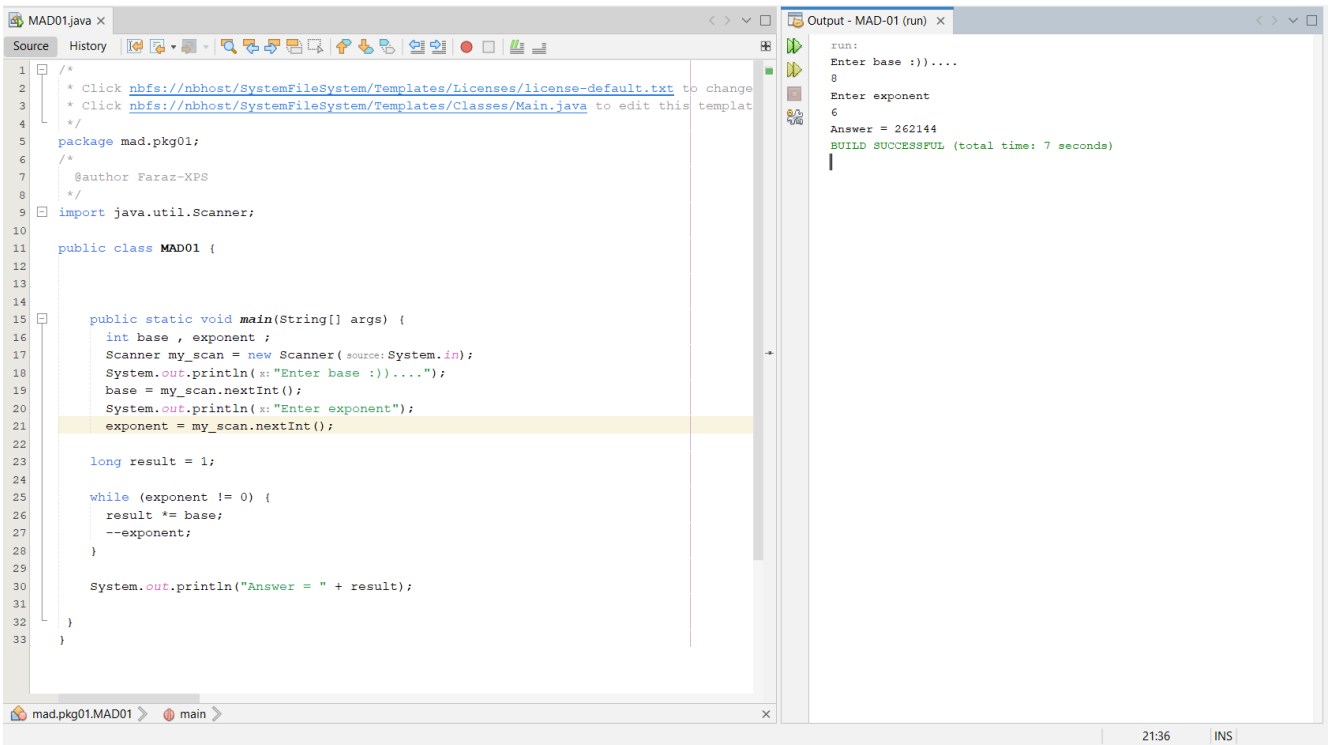

public class MAD01 {


    public static void main(String[] args) {
         Scanner my_scan = new Scanner( source: System.in);
            int n, num1,num2,num3, reverse;
         System.out.println( x: "Enter the Three numbers");
           n= my_scan.nextInt();
    num1 = n / 100;
     num2 = (n % 100) / 10;
     num3 = n%10 ;
     reverse = 100*num3 + 10*num2 + num1;

         System.out.println("First number:"+num1);
          System.out.println("Second number:"+num2);
           System.out.println("Third number:"+num3);
           System.out.println("IN reverse form :"+reverse);
     }
}
```

```
run:
Enter the Three numbers
543
First number:5
Second number:4
Third number:3
IN reverse form :345
BUILD SUCCESSFUL (total time: 3 seconds)
```

20. Write a program in Java to find power of any number using for loop. Sample Output: Input the base: 2 Input the exponent: 5 2 ^ 5 = 32



```
/*
 * Click nbfs://nbhost/SystemFileSystem/Templates/Licenses/license-default.txt to change
 * Click nbfs://nbhost/SystemFileSystem/Templates/Classes/Main.java to edit this templat
 */
package mad.pkg01;
/*
  @author Faraz-XPS
 */
import java.util.Scanner;

public class MAD01 {



    public static void main(String[] args) {
      int base , exponent ;
      Scanner my_scan = new Scanner( source: System.in);
      System.out.println( x: "Enter base :))....");
      base = my_scan.nextInt();
      System.out.println( x: "Enter exponent");
      exponent = my_scan.nextInt();

    long result = 1;

    while (exponent != 0) {
      result *= base;
      --exponent;
    }

    System.out.println("Answer = " + result);

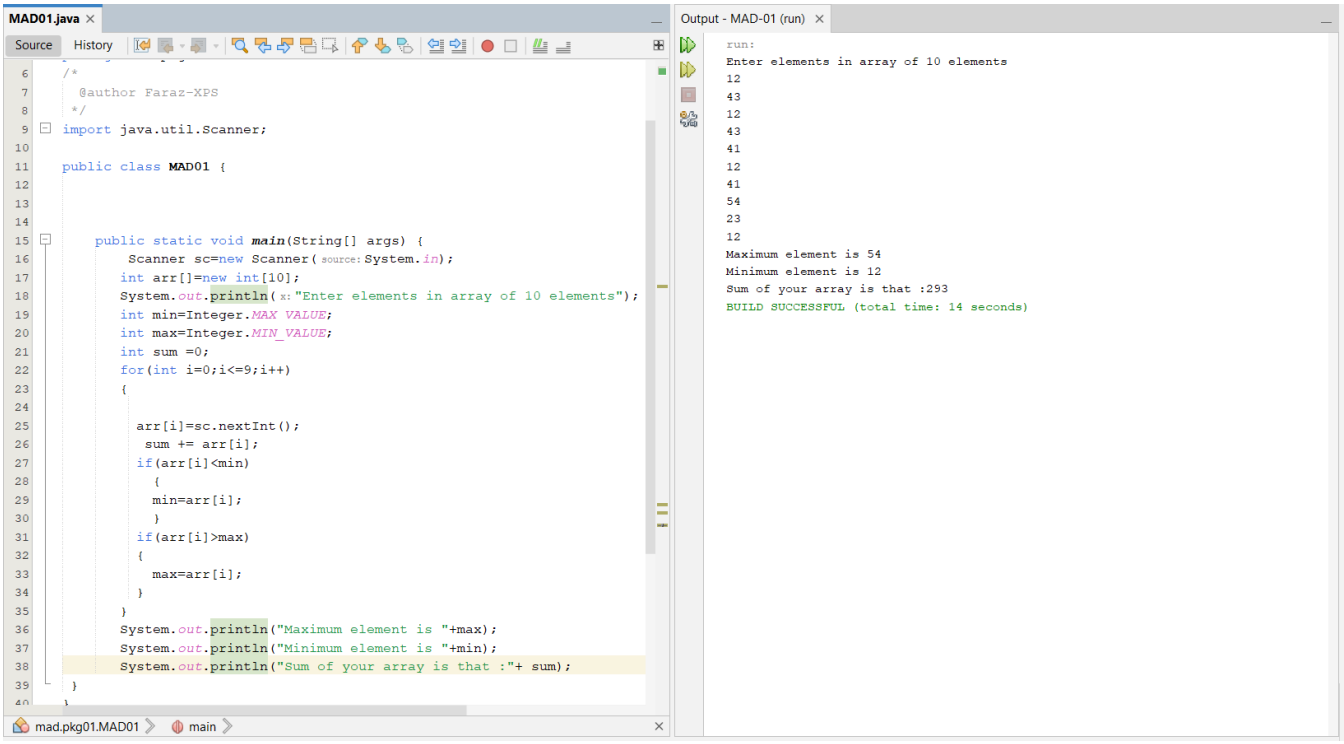
 }
}
```

```
run:
Enter base :))....
8
Enter exponent
6
Answer = 262144
BUILD SUCCESSFUL (total time: 7 seconds)
```

FARAZ
Mobile Application Developer

TECH LEGION

21. Write a program that inputs 10 elements in a 1D array. The program should then print the sum, max and min value in the array.



```
/*
 @author Faraz-XPS
*/
import java.util.Scanner;

public class MAD01 {

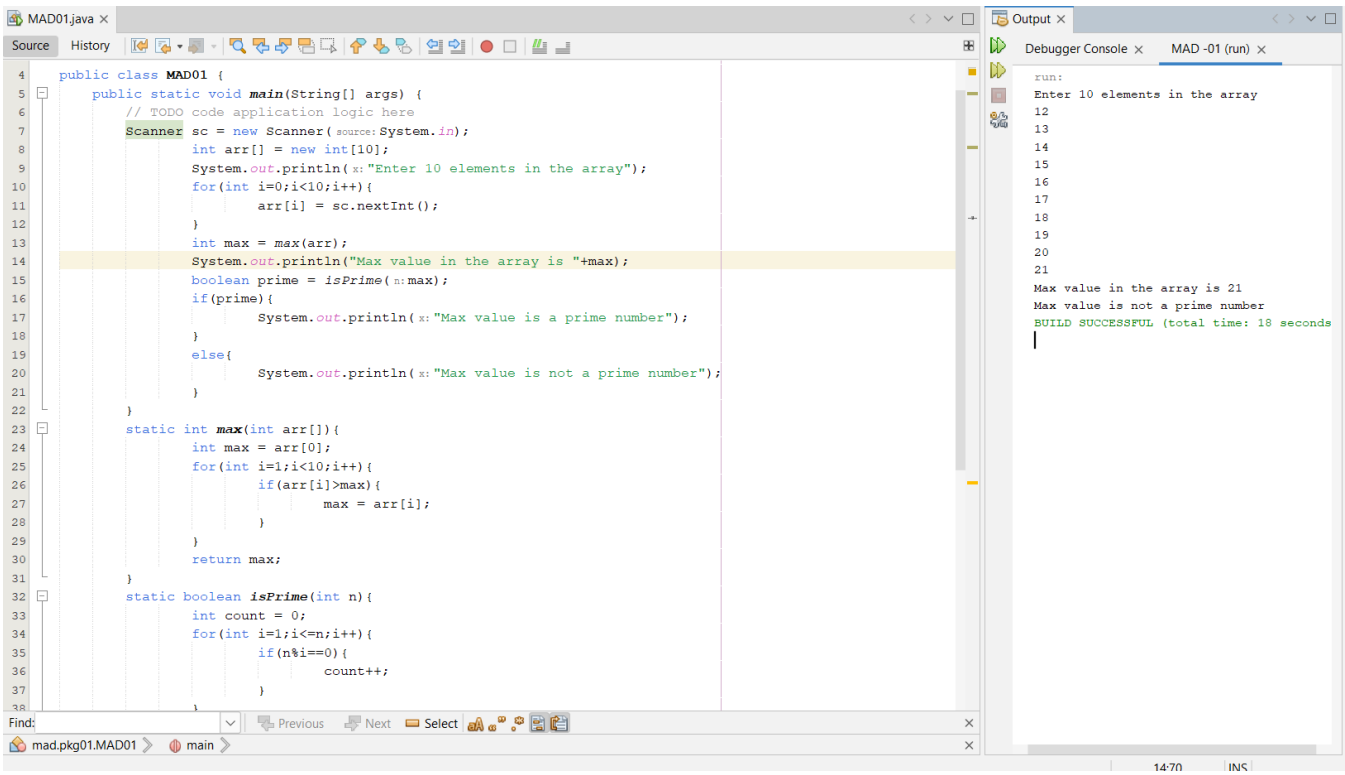


    public static void main(String[] args) {
        Scanner sc=new Scanner( source: System.in);
       int arr[]=new int[10];
       System.out.println( x: "Enter elements in array of 10 elements");
       int min=Integer.MAX_VALUE;
       int max=Integer.MIN_VALUE;
       int sum =0;
       for(int i=0;i<=9;i++)
       {

        arr[i]=sc.nextInt();
         sum += arr[i];
        if(arr[i]<min)
          {
          min=arr[i];
          }
        if(arr[i]>max)
        {
          max=arr[i];
        }
       }
       System.out.println("Maximum element is "+max);
       System.out.println("Minimum element is "+min);
       System.out.println("Sum of your array is that :"+ sum);
    }
}
```

```
run:
Enter elements in array of 10 elements
12
43
12
43
41
12
41
54
23
12
Maximum element is 54
Minimum element is 12
Sum of your array is that :293
BUILD SUCCESSFUL (total time: 14 seconds)
```

22. Write a program that takes 10 elements in a 1D array and pass it to a function that should return max value in that array. Then pass this returned value to another function that should return true if that value is a prime number and false if it is composite.



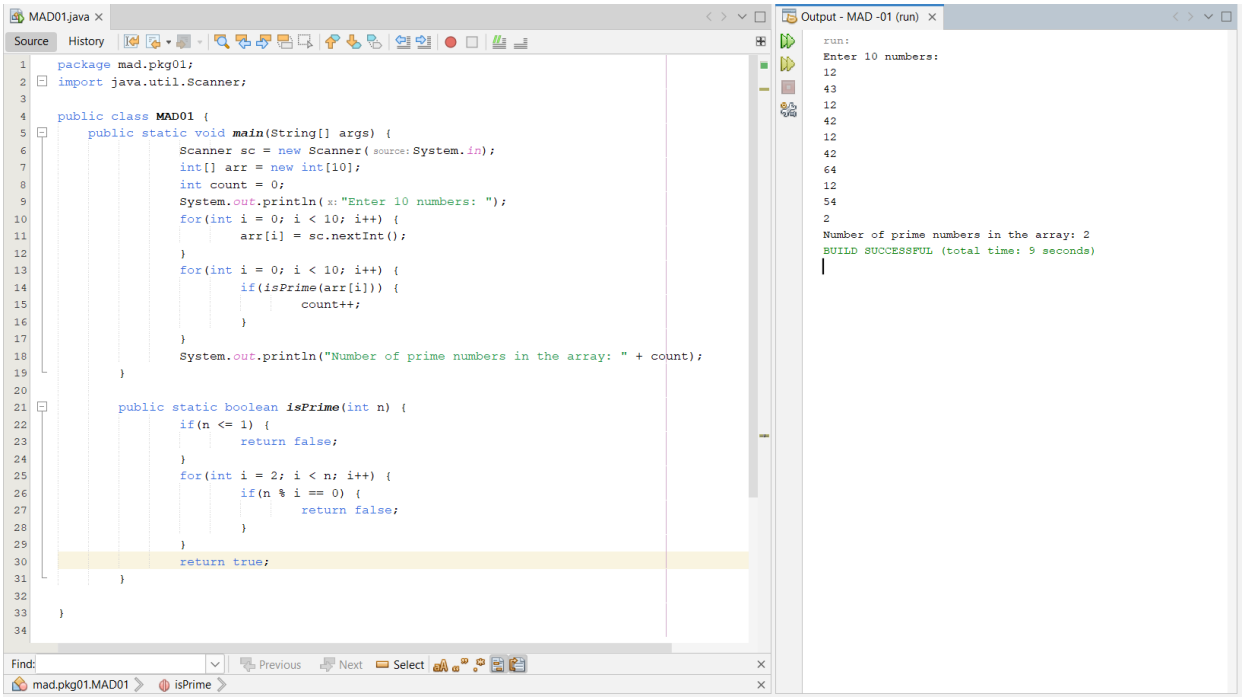
```
public class MAD01 {
    public static void main(String[] args) {
        // TODO code application logic here
        Scanner sc = new Scanner( source: System.in);
                int arr[] = new int[10];
                System.out.println( x: "Enter 10 elements in the array");
                for(int i=0;i<10;i++){
                        arr[i] = sc.nextInt();
                }
                int max = max(arr);
                System.out.println("Max value in the array is "+max);
                boolean prime = isPrime( n: max);
                if(prime){
                        System.out.println( x: "Max value is a prime number");
                }
                else{
                        System.out.println( x: "Max value is not a prime number");
                }
        }
        static int max(int arr[]){
                int max = arr[0];
                for(int i=1;i<10;i++){
                        if(arr[i]>max){
                                max = arr[i];
                        }
                }
                return max;
        }
        static boolean isPrime(int n){
                int count = 0;
                for(int i=1;i<=n;i++){
                        if(n%i==0){
                                count++;
                        }
                }
```

```
run:
Enter 10 elements in the array
12
13
14
15
16
17
18
19
20
21
Max value in the array is 21
Max value is not a prime number
BUILD SUCCESSFUL (total time: 18 seconds
```

```
                }
                if(count==2){
                        return true;
                }
                else{
                        return false;
                }
        }

}
```

23. Write a program that inputs 10 elements in an array. The program should print the number of prime numbers in the array.



```
package mad.pkg01;
import java.util.Scanner;

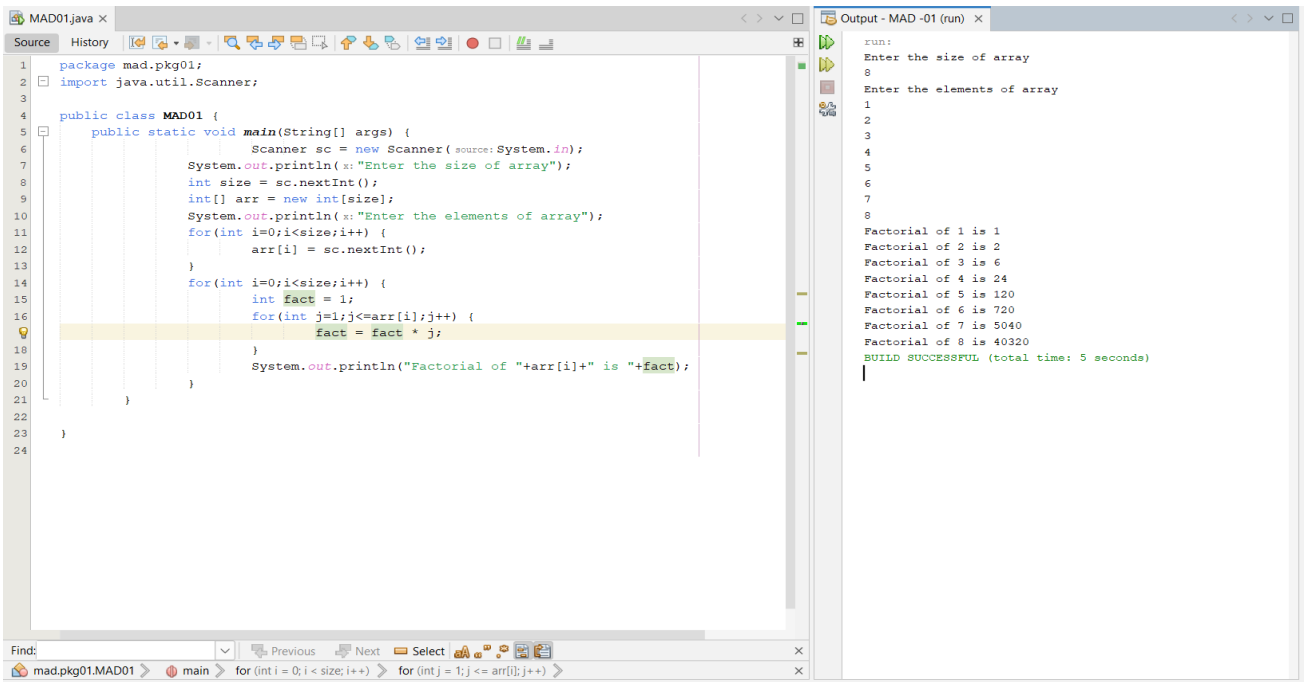
public class MAD01 {
    public static void main(String[] args) {
                Scanner sc = new Scanner( source: System.in);
                int[] arr = new int[10];
                int count = 0;
                System.out.println( x: "Enter 10 numbers: ");
                for(int i = 0; i < 10; i++) {
                        arr[i] = sc.nextInt();
                }
                for(int i = 0; i < 10; i++) {
                        if(isPrime(arr[i])) {
                                count++;
                        }
                }
                System.out.println("Number of prime numbers in the array: " + count);
        }

        public static boolean isPrime(int n) {
                if(n <= 1) {
                        return false;
                }
                for(int i = 2; i < n; i++) {
                        if(n % i == 0) {
                                return false;
                        }
                }
                return true;
        }

}
```

```
run:
Enter 10 numbers:
12
43
12
42
12
42
64
12
54
2
Number of prime numbers in the array: 2
BUILD SUCCESSFUL (total time: 9 seconds)
```

24. Write a program that inputs 10 elements in an array. The program should print factorial of each number stored in the array.



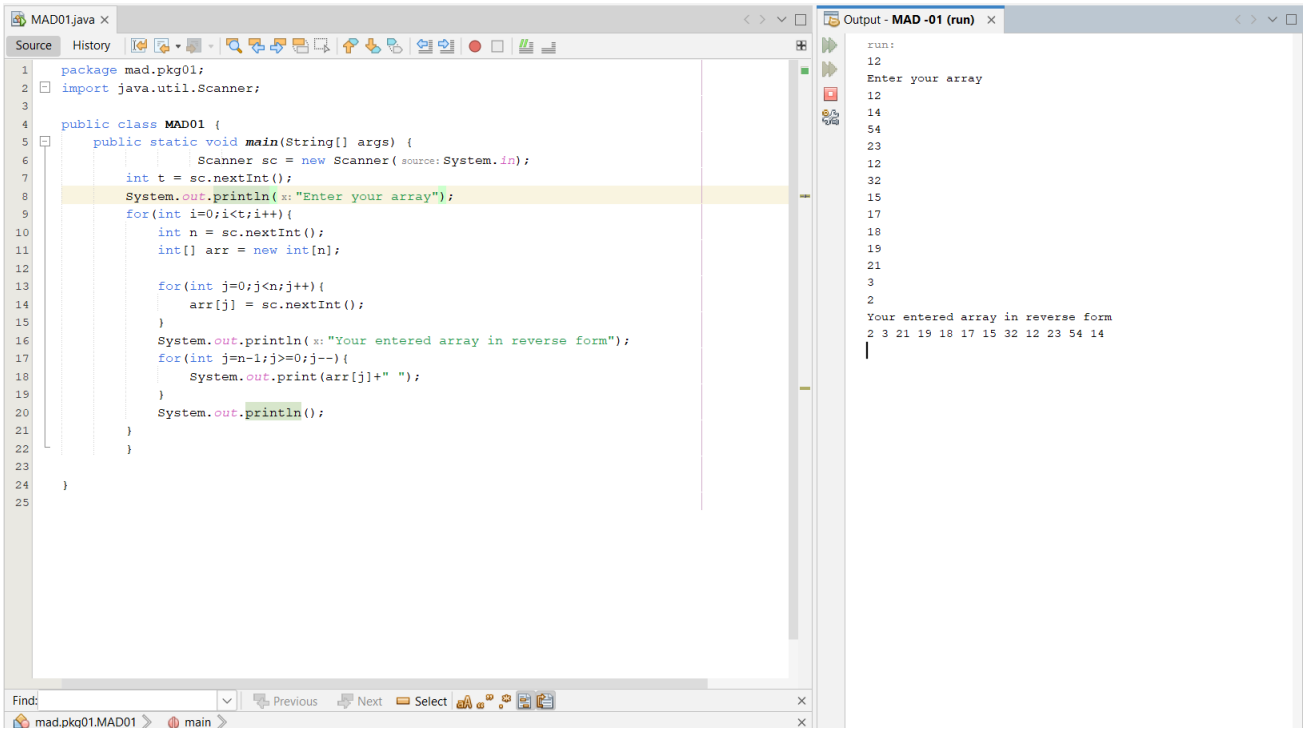
```
package mad.pkg01;
import java.util.Scanner;

public class MAD01 {
    public static void main(String[] args) {
                        Scanner sc = new Scanner( source: System.in);
                System.out.println( x: "Enter the size of array");
                int size = sc.nextInt();
                int[] arr = new int[size];
                System.out.println( x: "Enter the elements of array");
                for(int i=0;i<size;i++) {
                        arr[i] = sc.nextInt();
                }
                for(int i=0;i<size;i++) {
                        int fact = 1;
                        for(int j=1;j<=arr[i];j++) {
                                fact = fact * j;
                        }
                        System.out.println("Factorial of "+arr[i]+" is "+fact);
                }
        }

}
```

```
run:
Enter the size of array
8
Enter the elements of array
1
2
3
4
5
6
7
8
Factorial of 1 is 1
Factorial of 2 is 2
Factorial of 3 is 6
Factorial of 4 is 24
Factorial of 5 is 120
Factorial of 6 is 720
Factorial of 7 is 5040
Factorial of 8 is 40320
BUILD SUCCESSFUL (total time: 5 seconds)
```

25. Write a program that inputs 10 elements in an array. You are required to reverse the elements of array and then print them. (Element at 0 index should be exchanged with the element at 9 index and vice versa)



```
package mad.pkg01;
import java.util.Scanner;

public class MAD01 {
    public static void main(String[] args) {
                Scanner sc = new Scanner( source: System.in);
        int t = sc.nextInt();
        System.out.println( x: "Enter your array");
        for(int i=0;i<t;i++){
            int n = sc.nextInt();
            int[] arr = new int[n];

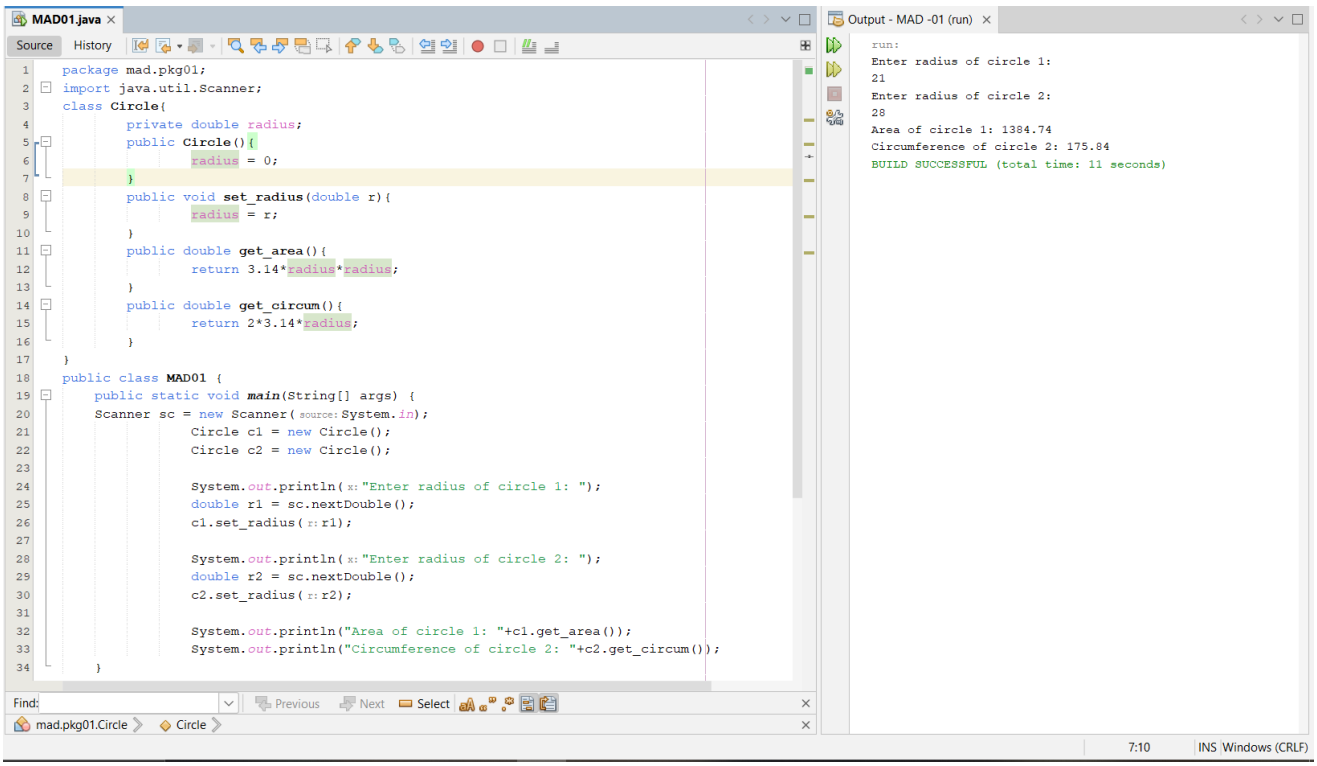
            for(int j=0;j<n;j++){
                arr[j] = sc.nextInt();
            }
            System.out.println( x: "Your entered array in reverse form");
            for(int j=n-1;j>=0;j--){
                System.out.print(arr[j]+" ");
            }
            System.out.println();
        }
        }

}
```

```
run:
12
Enter your array
12
14
54
23
12
32
15
17
18
19
21
3
2
Your entered array in reverse form
2 3 21 19 18 17 15 32 12 23 54 14
```

26. Write a class "Circle" with one data member radius. Write following member functions:

- **set_radius() that accepts a value in parameter and assigns to radius**
- **get_area() that calculate and return area**
- **get_circum() that calculate and return circumference The program should create two objects of class and input radius for these objects. The program should display area for first object and circumference for second object.**



```
package mad.pkg01;
import java.util.Scanner;
class Circle{
        private double radius;
        public Circle(){
                radius = 0;
        }
        public void set_radius(double r){
                radius = r;
        }
        public double get_area(){
                return 3.14*radius*radius;
        }
        public double get_circum(){
                return 2*3.14*radius;
        }
}
public class MAD01 {
    public static void main(String[] args) {
    Scanner sc = new Scanner( source: System.in);
                Circle c1 = new Circle();
                Circle c2 = new Circle();

                System.out.println( x: "Enter radius of circle 1: ");
                double r1 = sc.nextDouble();
                c1.set_radius( r: r1);

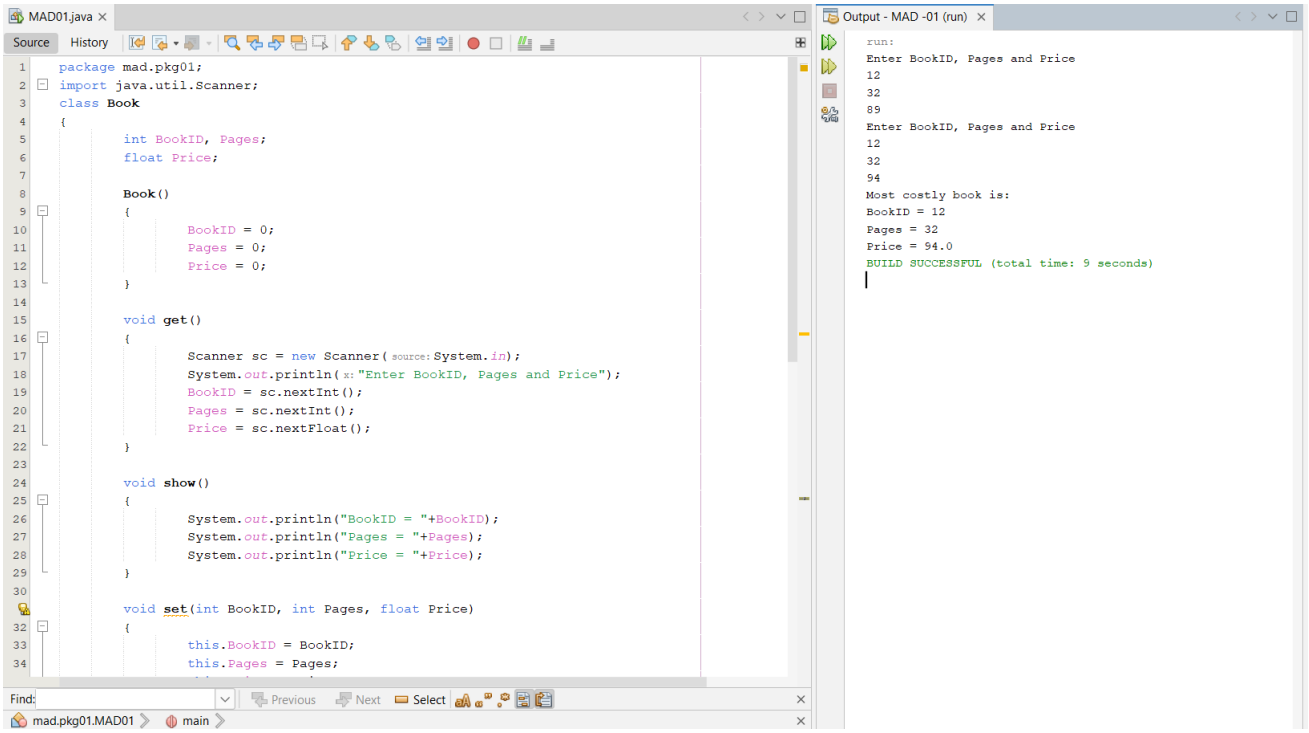
                System.out.println( x: "Enter radius of circle 2: ");
                double r2 = sc.nextDouble();
                c2.set_radius( r: r2);

                System.out.println("Area of circle 1: "+c1.get_area());
                System.out.println("Circumference of circle 2: "+c2.get_circum());
    }
```

```
run:
Enter radius of circle 1:
21
Enter radius of circle 2:
28
Area of circle 1: 1384.74
Circumference of circle 2: 175.84
BUILD SUCCESSFUL (total time: 11 seconds)
```

27. Write a class "Book" with three data members BookID, Pages and Price. It also contains following member functions:

- **A constructor that assigns the data members with any initial value. (mostly zero)**
- **The get() is used to input values**
- **The show() is used to display values**
- **The set() is used to set values of data members using parameters**
- **The getPrice() is used to return value of price The program should create two objects of class and input values for these objects. The program should display the details of most costly book.**



```
package mad.pkg01;
import java.util.Scanner;
class Book
{
        int BookID, Pages;
        float Price;

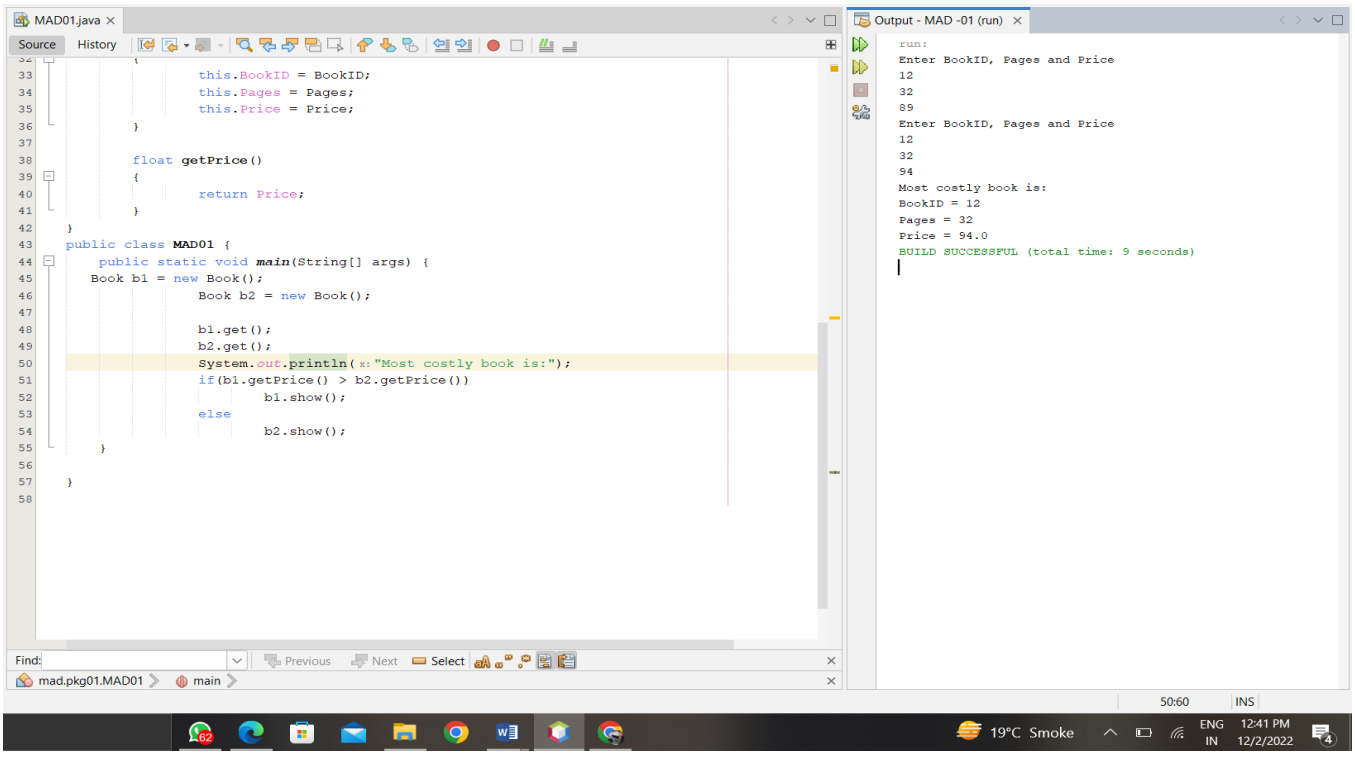
        Book()
        {
                BookID = 0;
                Pages = 0;
                Price = 0;
        }

        void get()
        {
                Scanner sc = new Scanner( source: System.in);
                System.out.println( x: "Enter BookID, Pages and Price");
                BookID = sc.nextInt();
                Pages = sc.nextInt();
                Price = sc.nextFloat();
        }

        void show()
        {
                System.out.println("BookID = "+BookID);
                System.out.println("Pages = "+Pages);
                System.out.println("Price = "+Price);
        }

        void set(int BookID, int Pages, float Price)
        {
                this.BookID = BookID;
                this.Pages = Pages;
```

```
run:
Enter BookID, Pages and Price
12
32
89
Enter BookID, Pages and Price
12
32
94
Most costly book is:
BookID = 12
Pages = 32
Price = 94.0
BUILD SUCCESSFUL (total time: 9 seconds)
```



```
                this.BookID = BookID;
                this.Pages = Pages;
                this.Price = Price;
        }

        float getPrice()
        {
                return Price;
        }
}
public class MAD01 {
    public static void main(String[] args) {
    Book b1 = new Book();
                Book b2 = new Book();

                b1.get();
                b2.get();
                System.out.println( x: "Most costly book is:");
                if(b1.getPrice() > b2.getPrice())
                        b1.show();
                else
                        b2.show();
    }

}
```

```
run:
Enter BookID, Pages and Price
12
32
89
Enter BookID, Pages and Price
12
32
94
Most costly book is:
BookID = 12
Pages = 32
Price = 94.0
BUILD SUCCESSFUL (total time: 9 seconds)
```

28. Write a class "Array" that contains an array of integers to store five values. It also contains following member functions.

- **A constructor that assigns all the elements of array with zero value.**
- **The Fill() function is used to fill the array with values from user**
- **The Display() function is used to display the values of array**
- **The Max() function shows the maximum value in the array**
- **The Min() function shows the minimum value in the array All member functions should be defined outside the class. Create an object in main function and make use of all member functions**

MAD01.java

```
package mad.pkg01;
import java.util.Scanner;

class Array
{
        int arr[] = new int[5];
        Array()
        {
                for(int i=0;i<5;i++)
                {
                        arr[i] = 0;
                }
        }
        void Fill()
        {
                Scanner sc = new Scanner( source: System.in);
                System.out.println( x: "Enter 5 numbers : ");
                for(int i=0;i<5;i++)
                {
                        arr[i] = sc.nextInt();
                }
        }
        void Display()
        {
                System.out.println( x: "The array is : ");
                for(int i=0;i<5;i++)
                {
                        System.out.print(arr[i]+" ");
                }
                System.out.println();
        }
        void Max()
        {
                int max = arr[0];
```

Output - MAD -01 (run)

```
run:
Enter 5 numbers :
63
2
23
43
12
The array is :
63 2 23 43 12
The maximum value is : 63
The minimum value is : 2
BUILD SUCCESSFUL (total time: 4 minutes 41 seconds)
```

MAD01.java

```
        {
                int max = arr[0];
                for(int i=1;i<5;i++)
                {
                        if(arr[i]>max)
                        {
                                max = arr[i];
                        }
                }
                System.out.println("The maximum value is : "+max);
        }
        void Min()
        {
                int min = arr[0];
                for(int i=1;i<5;i++)
                {
                        if(arr[i]<min)
                        {
                                min = arr[i];
                        }
                }
                System.out.println("The minimum value is : "+min);
        }
}

public class MAD01 {
    public static void main(String[] args) {
   Array a = new Array();
                a.Fill();
                a.Display();
                a.Max();
                a.Min();
    }

}
```

Output - MAD -01 (run)

```
run:
Enter 5 numbers :
63
2
23
43
12
The array is :
63 2 23 43 12
The maximum value is : 63
The minimum value is : 2
BUILD SUCCESSFUL (total time: 4 minutes 41 seconds)
```