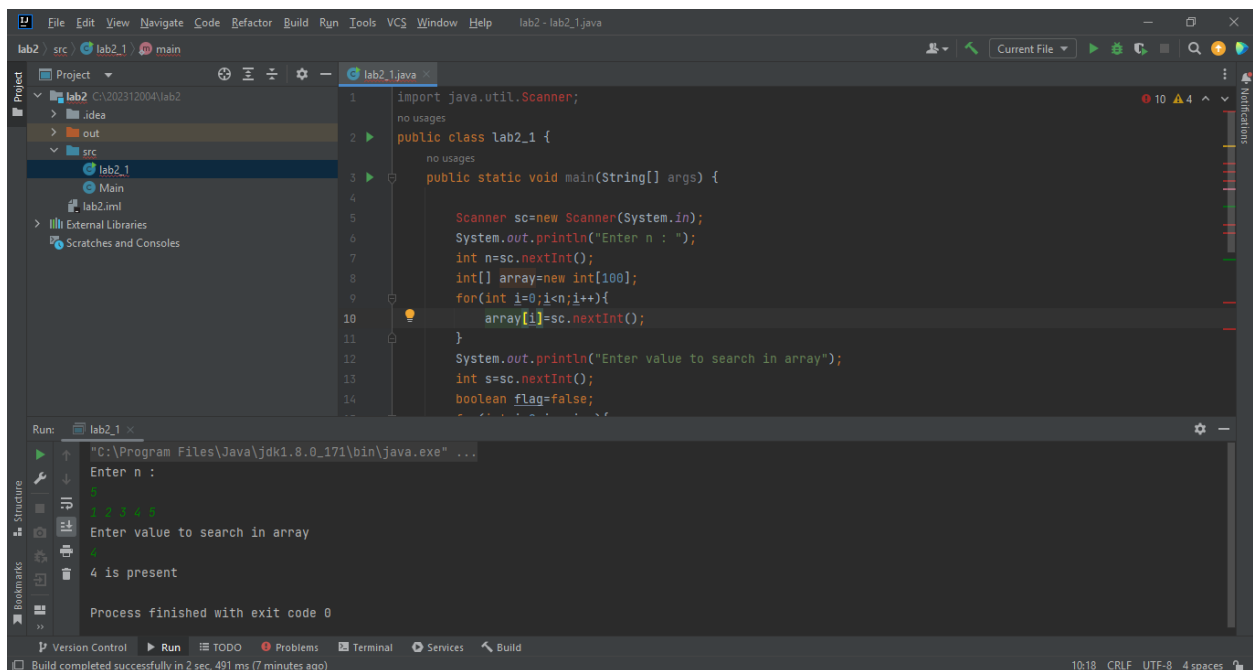


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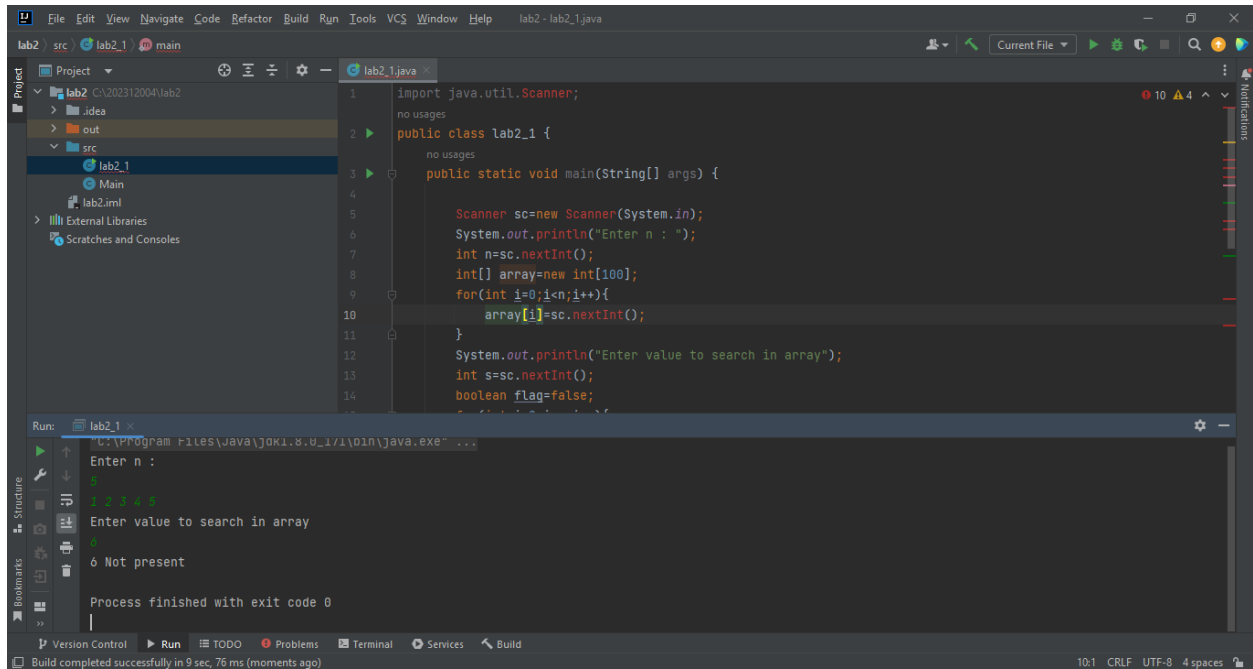
1)

```
import java.util.Scanner;
public class lab2_1 {
    public static void main(String[] args) {

        Scanner sc=new Scanner(System.in);
        System.out.println("Enter n : ");
        int n=sc.nextInt();
        int[] array=new int[100];
        for(int i=0;i<n;i++){
            array[i]=sc.nextInt();
        }
        System.out.println("Enter value to search in array");
        int s=sc.nextInt();
        boolean flag=false;
        for(int i=0;i<n;i++){
            if(array[i] == s){
                flag=true;
            }
        }
        if(flag){
            System.out.println(s + " is present");
        }
        else{
            System.out.println(s + " Not present");
        }
    }
}
```



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The screenshot shows an IDE with a project named 'lab2'. The source file 'lab2\_1.java' is open, containing the following code:

```
1 import java.util.Scanner;
2 public class lab2_1 {
3     public static void main(String[] args) {
4
5         Scanner sc=new Scanner(System.in);
6         System.out.println("Enter n : ");
7         int n=sc.nextInt();
8         int[] array=new int[100];
9         for(int i=0;i<n;i++){
10             array[i]=sc.nextInt();
11         }
12         System.out.println("Enter value to search in array");
13         int s=sc.nextInt();
14         boolean flag=false;
```

The 'Run' window at the bottom shows the execution output:

```
Enter n :
5
Enter value to search in array
6
6 Not present
Process finished with exit code 0
```

2)

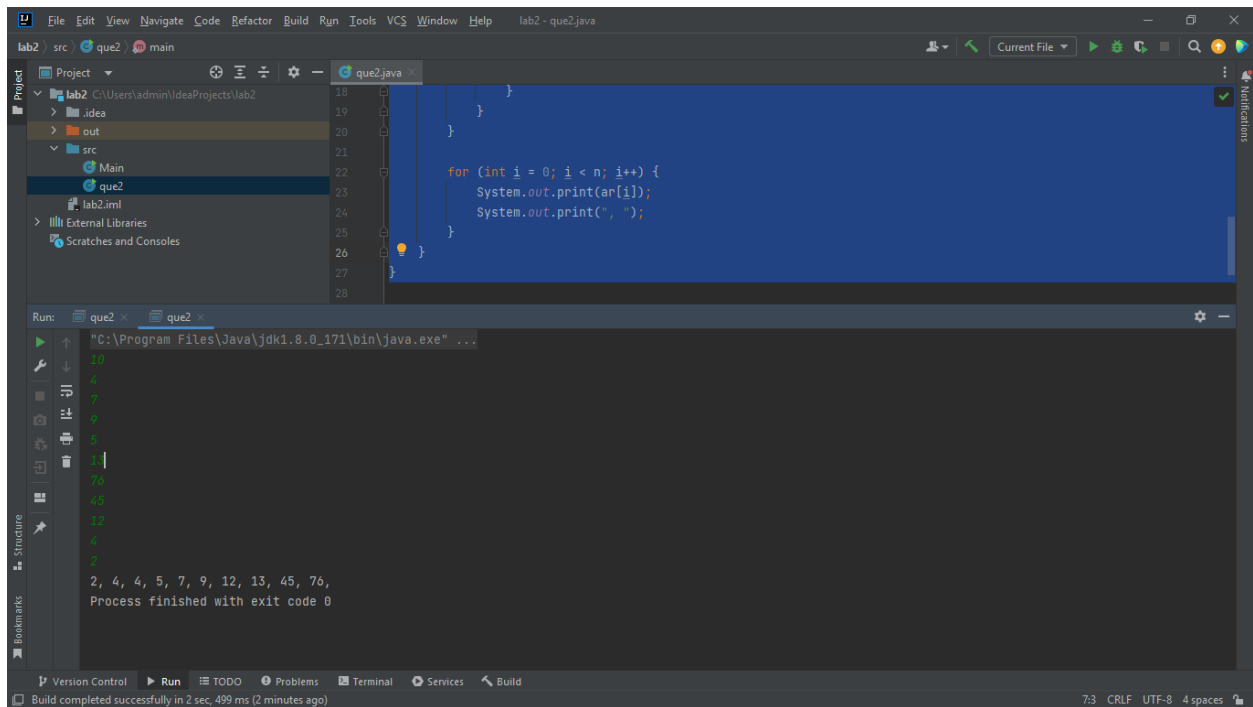
```
import java.util.*;

public class que2 {
    public static void main(String[] args) {
        Scanner sc = new Scanner(System.in);
        int n = sc.nextInt();
        int[] ar = new int[n];
        for (int i = 0; i < n; i++){
            ar[i] = sc.nextInt();
        }

        for (int i = n - 1; i >= 0; i--) {
            for (int j = 0; j < i; j++) {
                if(ar[j] > ar[j + 1]){
                    int temp = ar[j];
                    ar[j] = ar[j + 1];
                    ar[j + 1] = temp;
                }
            }
        }

        for (int i = 0; i < n; i++) {
            System.out.print(ar[i]);
            System.out.print(", ");
        }
    }
}
```

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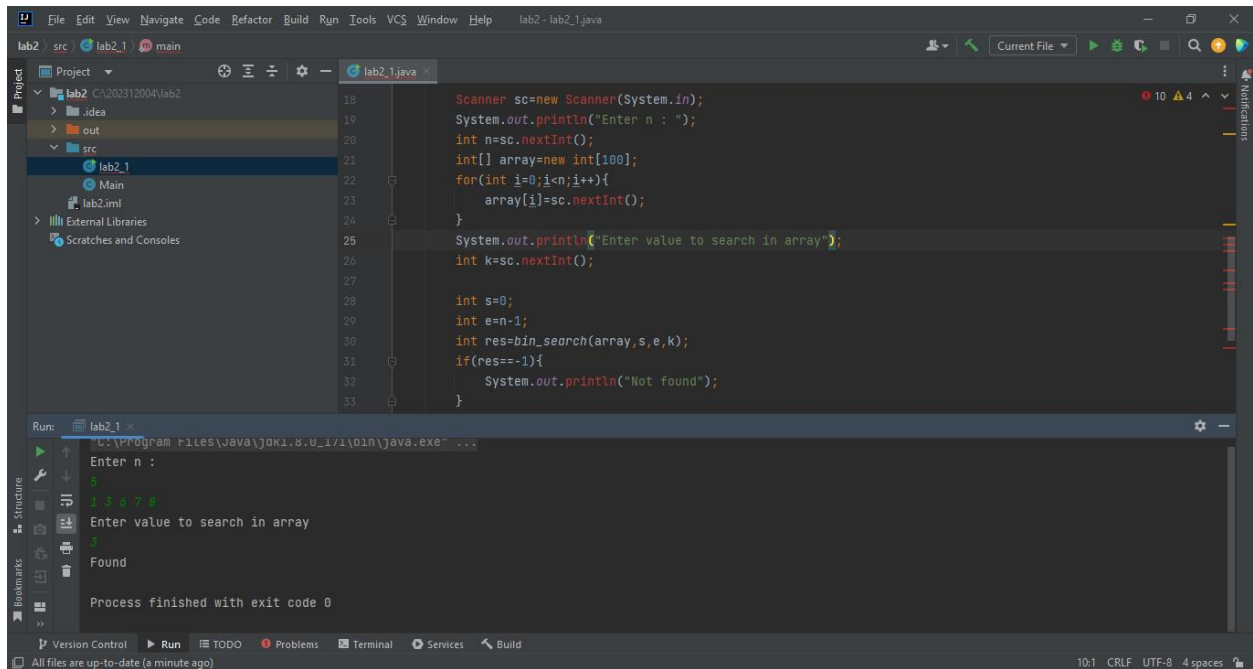
3)

```
import java.util.Scanner;
public class lab2_1 {
    static int bin_search(int array[], int s, int e, int k){
        while(s<=e) {
            int mid=s+e/2;
            if (array[mid] == k) {
                return mid;
            } else if (array[mid] < k) {
                s = mid + 1;
            } else {
                e = mid - 1;
            }
        }
        return -1;
    }
    public static void main(String[] args) {

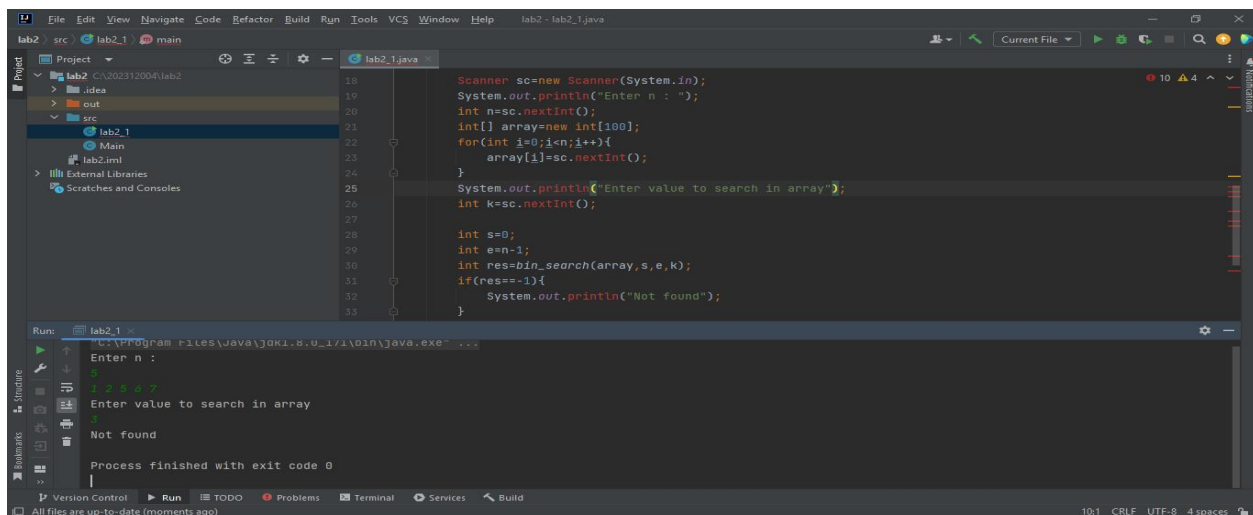
        Scanner sc=new Scanner(System.in);
        System.out.println("Enter n : ");
        int n=sc.nextInt();
        int[] array=new int[100];
        for(int i=0;i<n;i++){
            array[i]=sc.nextInt();
        }
        System.out.println("Enter value to search in array");
        int k=sc.nextInt();
```

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```
int s=0;
int e=n-1;
int res=bin_search(array,s,e,k);
if(res==-1){
    System.out.println("Not found");
}
else{
    System.out.println("Found");
}
}
```



```
File Edit View Navigate Code Refactor Build Run Tools VCS Window Help lab2 - lab2_1.java
lab2 src lab2_1 main
Project
lab2 CA\202312004\lab2
  > idea
  > out
  > src
    lab2_1
    Main
    lab2.iml
  > External Libraries
  > Scratches and Consoles
lab2_1.java
18 Scanner sc=new Scanner(System.in);
19 System.out.println("Enter n : ");
20 int n=sc.nextInt();
21 int[] array=new int[100];
22 for(int i=0;i<n;i++){
23     array[i]=sc.nextInt();
24 }
25 System.out.println("Enter value to search in array");
26 int k=sc.nextInt();
27
28 int s=0;
29 int e=n-1;
30 int res=bin_search(array,s,e,k);
31 if(res==-1){
32     System.out.println("Not found");
33 }
Run: lab2_1 x
C:\Program Files\Java\jdk1.8.0_11\bin\java.exe ...
Enter n :
5
1 3 6 7 8
Enter value to search in array
3
Found
Process finished with exit code 0
Version Control Run TODO Problems Terminal Services Build
All files are up-to-date (a minute ago) 10:1 CRLF UTF-8 4 spaces
```



```
File Edit View Navigate Code Refactor Build Run Tools VCS Window Help lab2 - lab2_1.java
lab2 src lab2_1 main
Project
lab2 CA\202312004\lab2
  > idea
  > out
  > src
    lab2_1
    Main
    lab2.iml
  > External Libraries
  > Scratches and Consoles
lab2_1.java
18 Scanner sc=new Scanner(System.in);
19 System.out.println("Enter n : ");
20 int n=sc.nextInt();
21 int[] array=new int[100];
22 for(int i=0;i<n;i++){
23     array[i]=sc.nextInt();
24 }
25 System.out.println("Enter value to search in array");
26 int k=sc.nextInt();
27
28 int s=0;
29 int e=n-1;
30 int res=bin_search(array,s,e,k);
31 if(res==-1){
32     System.out.println("Not found");
33 }
Run: lab2_1 x
C:\Program Files\Java\jdk1.8.0_11\bin\java.exe ...
Enter n :
5
1 2 5 6 7
Enter value to search in array
3
Not found
Process finished with exit code 0
Version Control Run TODO Problems Terminal Services Build
All files are up-to-date (moments ago) 10:1 CRLF UTF-8 4 spaces
```

4)

```
import java.util.Scanner;
public class lab2_1 {
    public static void main(String[] args) {

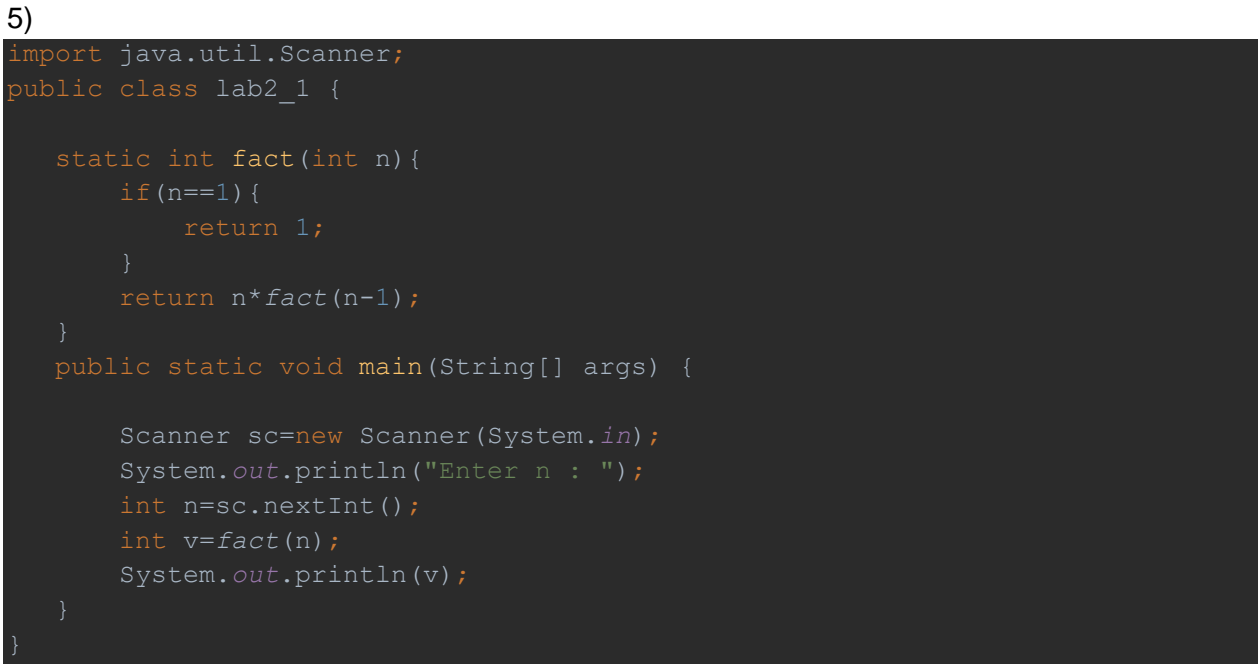
        Scanner input = new Scanner(System.in);
        int a,b,ch;

        System.out.println("1. Addition");
        System.out.println("2. Subtraction");
        System.out.println("3. Multiplication");
        System.out.println("4. Division");
        System.out.print("Select your Choice: ");
        ch = input.nextInt();

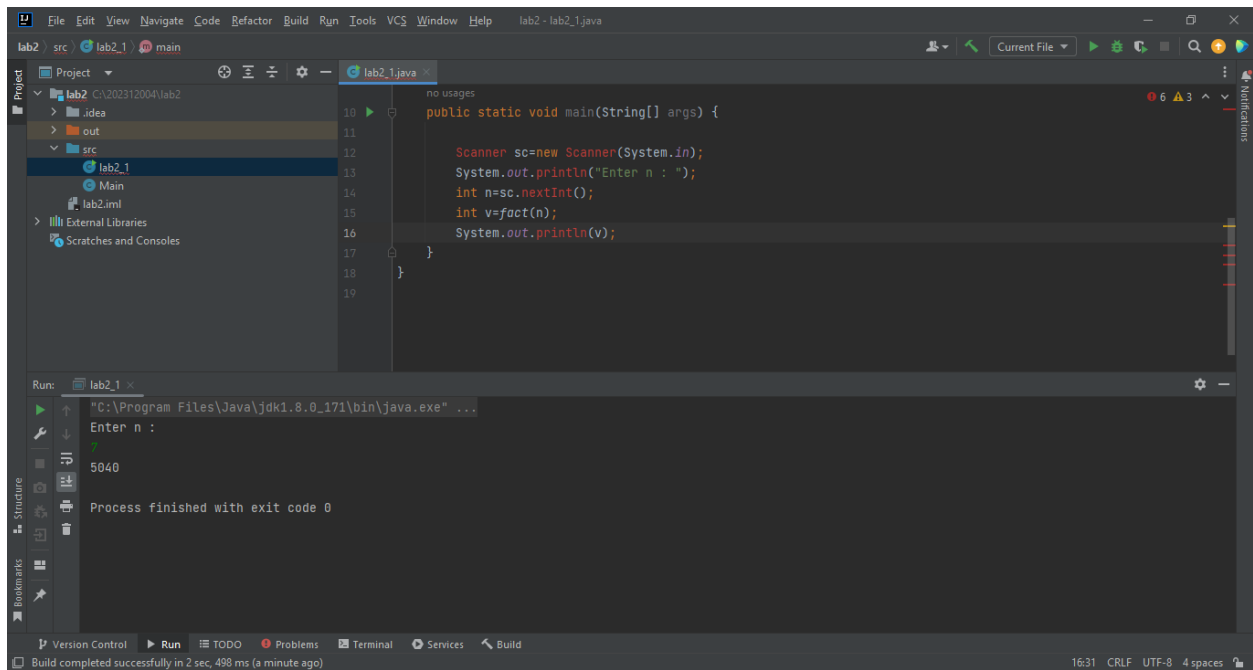
        switch(ch)
        {
            case 1:
                System.out.print("Enter the Number 1 :");
                a=input.nextInt();
                System.out.print("Enter the Number 2 :");
                b=input.nextInt();
                System.out.print("Addition = " + (a+b));
                break;
            case 2:
                System.out.print("Enter the Number 1 :");
                a=input.nextInt();
                System.out.print("Enter the Number 2 :");
                b=input.nextInt();
                System.out.print("Subtraction = " + (a-b));
                break;
            case 3:
                System.out.print("Enter the Number 1 :");
                a=input.nextInt();
                System.out.print("Enter the Number 2 :");
                b=input.nextInt();
                System.out.print("Multiplication = " + (a*b));
                break;
            case 4:
                System.out.print("Enter the Number 1 :");
                a=input.nextInt();
                System.out.print("Enter the Number 2 :");
                b=input.nextInt();
                System.out.print("Division = " + (a/b));
                break;
            default:
                System.out.print("Invalid Choice");
        }
    }
}
```

```
}

```



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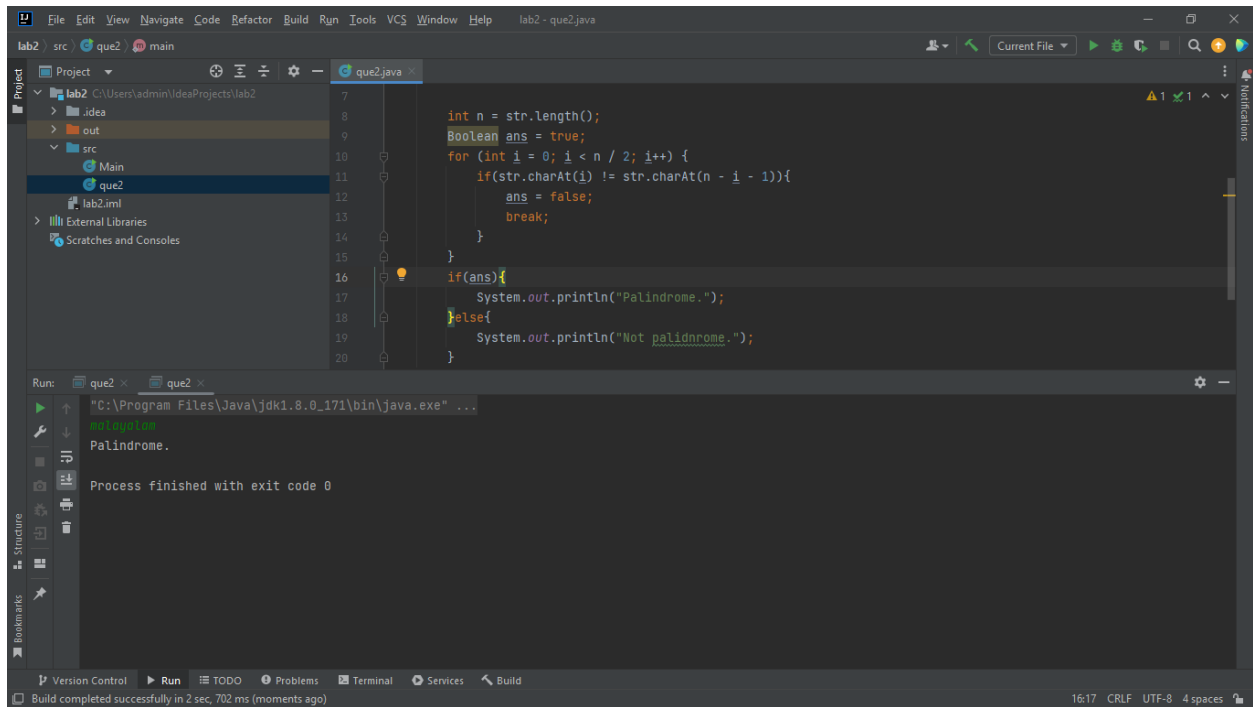
6)

```
import java.util.*;

public class que2 {
    public static void main(String[] args) {
        Scanner sc = new Scanner(System.in);
        String str = sc.nextLine();

        int n = str.length();
        Boolean ans = true;
        for (int i = 0; i < n / 2; i++) {
            if(str.charAt(i) != str.charAt(n - i - 1)){
                ans = false;
                break;
            }
        }
        if(ans){
            System.out.println("Palindrome.");
        }else{
            System.out.println("Not palidnrome.");
        }
    }
}
```

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7)

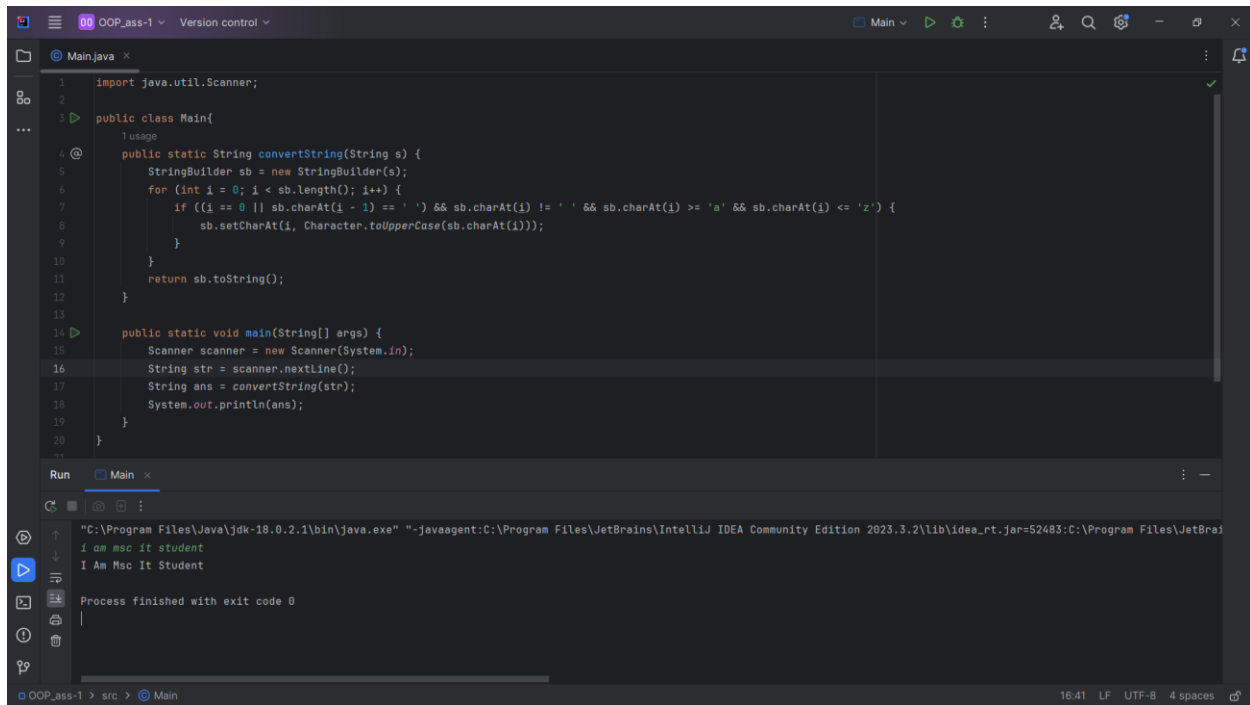
```
import java.util.Scanner;

public class Main{
    public static String convertString(String s) {
        StringBuilder sb = new StringBuilder(s);
        for (int i = 0; i < sb.length(); i++) {
            if ((i == 0 || sb.charAt(i - 1) == ' ') && sb.charAt(i) != ' ' &&
sb.charAt(i) >= 'a' && sb.charAt(i) <= 'z') {
                sb.setCharAt(i, Character.toUpperCase(sb.charAt(i)));
            }
        }
        return sb.toString();
    }

    public static void main(String[] args) {
        Scanner scanner = new Scanner(System.in);
        String str = scanner.nextLine();
        String ans = convertString(str);
        System.out.println(ans);
    }
}
```



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```
1 import java.util.Scanner;
2
3 public class Main{
4     public static String convertString(String s) {
5         StringBuilder sb = new StringBuilder(s);
6         for (int i = 0; i < sb.length(); i++) {
7             if ((i == 0 || sb.charAt(i - 1) == ' ') && sb.charAt(i) != ' ' && sb.charAt(i) >= 'a' && sb.charAt(i) <= 'z') {
8                 sb.setCharAt(i, Character.toUpperCase(sb.charAt(i)));
9             }
10        }
11        return sb.toString();
12    }
13
14    public static void main(String[] args) {
15        Scanner scanner = new Scanner(System.in);
16        String str = scanner.nextLine();
17        String ans = convertString(str);
18        System.out.println(ans);
19    }
20 }
```

Run Main

"C:\Program Files\Java\jdk-18.0.2.1\bin\java.exe" "-javaagent:C:\Program Files\JetBrains\IntelliJ IDEA Community Edition 2023.3.2\lib\idea\_rt.jar=52483:C:\Program Files\JetBrains\IntelliJ IDEA Community Edition 2023.3.2\bin" -Didea.config.path=C:\Program Files\JetBrains\IntelliJ IDEA Community Edition 2023.3.2\conf -Didea.copyright.notification.enabled=true -Didea.log.path=C:\Program Files\JetBrains\IntelliJ IDEA Community Edition 2023.3.2\log -Didea.platform.prefix=Java -Didea.version=2023.3.2 -jar C:\Program Files\JetBrains\IntelliJ IDEA Community Edition 2023.3.2\bin\idea.jar

I am msc it student  
I AM MSC IT STUDENT

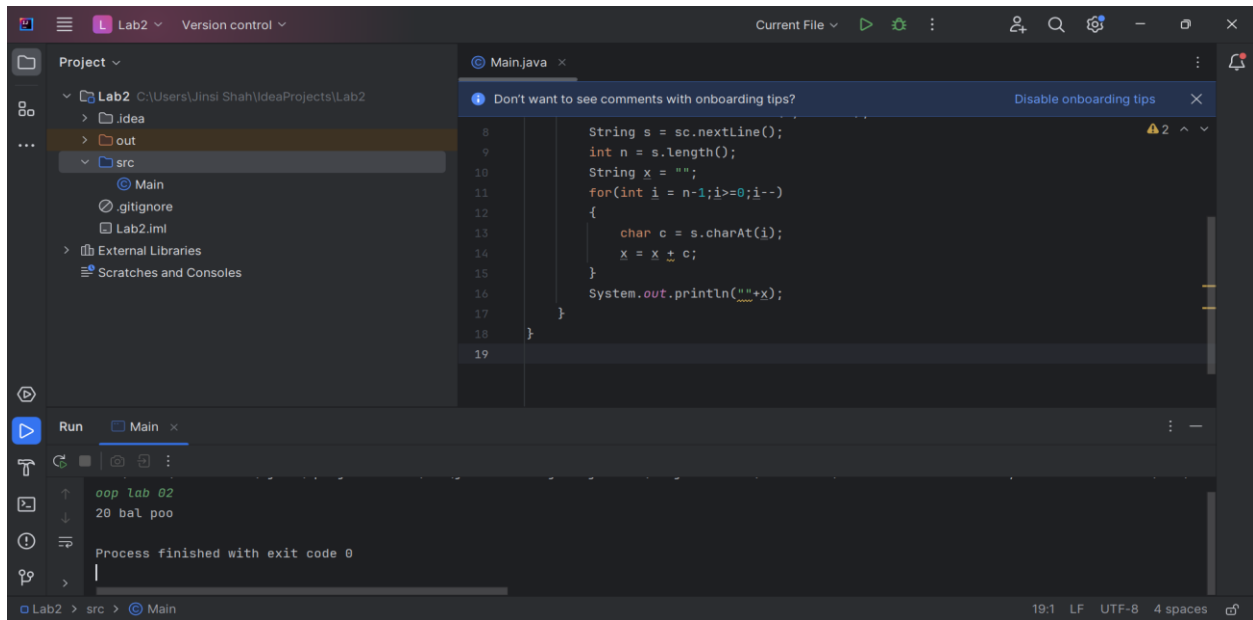
Process finished with exit code 0

8)

```
import java.util.Scanner;

public class Main
{
    public static void main(String[] args) {
        Scanner sc = new Scanner(System.in);
        String s = sc.nextLine();
        int n = s.length();
        String x = "";
        for(int i = n-1;i>=0;i--)
        {
            char c = s.charAt(i);
            x = x + c;
        }
        System.out.println(""+x);
    }
}
```

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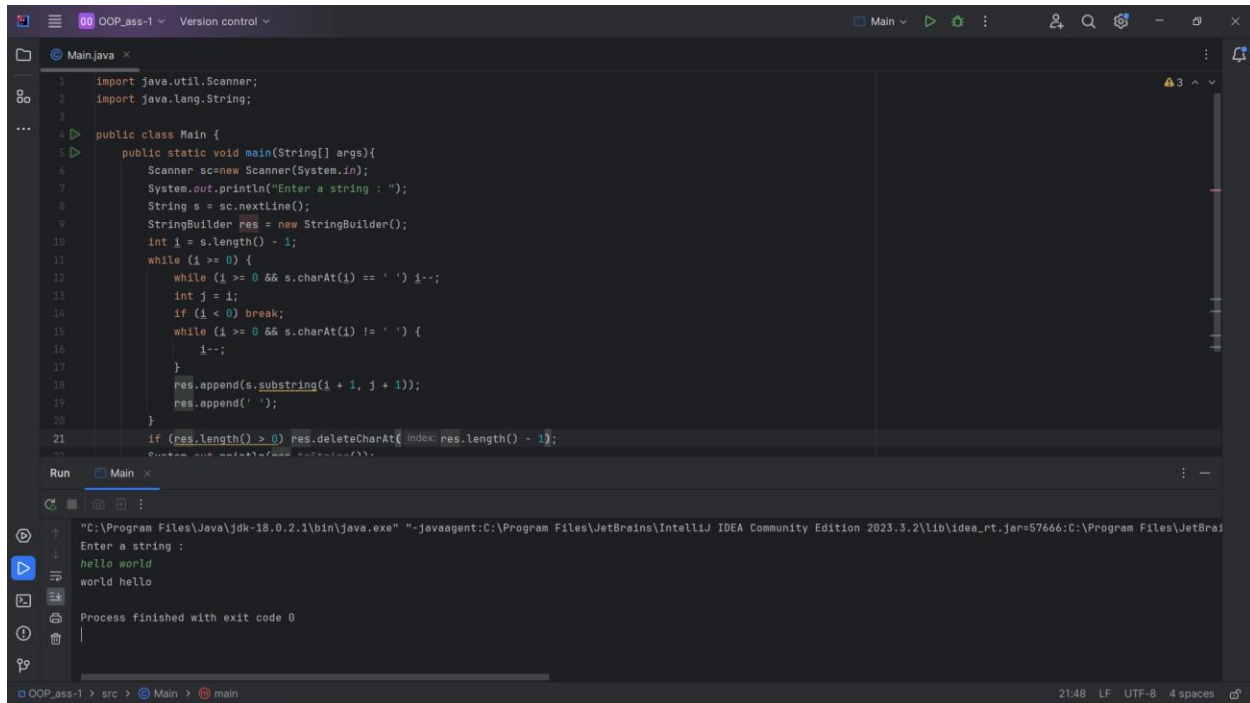


9)

```
import java.util.Scanner;
import java.lang.String;

public class Main {
    public static void main(String[] args){
        Scanner sc=new Scanner(System.in);
        System.out.println("Enter a string : ");
        String s = sc.nextLine();
        StringBuilder res = new StringBuilder();
        int i = s.length() - 1;
        while (i >= 0) {
            while (i >= 0 && s.charAt(i) == ' ') i--;
            int j = i;
            if (i < 0) break;
            while (i >= 0 && s.charAt(i) != ' ') {
                i--;
            }
            res.append(s.substring(i + 1, j + 1));
            res.append(' ');
        }
        if (res.length() > 0) res.deleteCharAt(res.length() - 1);
        System.out.println(res.toString());
    }
}
```

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```
1 import java.util.Scanner;
2 import java.lang.String;
3
4 public class Main {
5     public static void main(String[] args){
6         Scanner sc=new Scanner(System.in);
7         System.out.println("Enter a string : ");
8         String s = sc.nextLine();
9         StringBuilder res = new StringBuilder();
10        int i = s.length() - 1;
11        while (i >= 0) {
12            while (i >= 0 && s.charAt(i) == ' ') i--;
13            int j = i;
14            if (i < 0) break;
15            while (i >= 0 && s.charAt(i) != ' ') {
16                i--;
17            }
18            res.append(s.substring(i + 1, j + 1));
19            res.append(' ');
20        }
21        if (res.length() > 0) res.deleteCharAt(index: res.length() - 1);
22        System.out.println(res.toString());
23    }
24 }
```

Run Main x

"C:\Program Files\Java\jdk-18.0.2.1\bin\java.exe" "-javaagent:C:\Program Files\JetBrains\IntelliJ IDEA Community Edition 2023.3.2\lib\idea\_rt.jar=57666:C:\Program Files\JetBrains\IntelliJ IDEA Community Edition 2023.3.2\bin" -Didea.config.path=C:\Program Files\JetBrains\IntelliJ IDEA Community Edition 2023.3.2\conf -Didea.copyright.notification=false -Didea.log.path=C:\Program Files\JetBrains\IntelliJ IDEA Community Edition 2023.3.2\log -Didea.platform.prefix=Java -Didea.version=2023.3.2

Enter a string :  
hello world  
world hello

Process finished with exit code 0

10)

```
import java.util.Scanner;

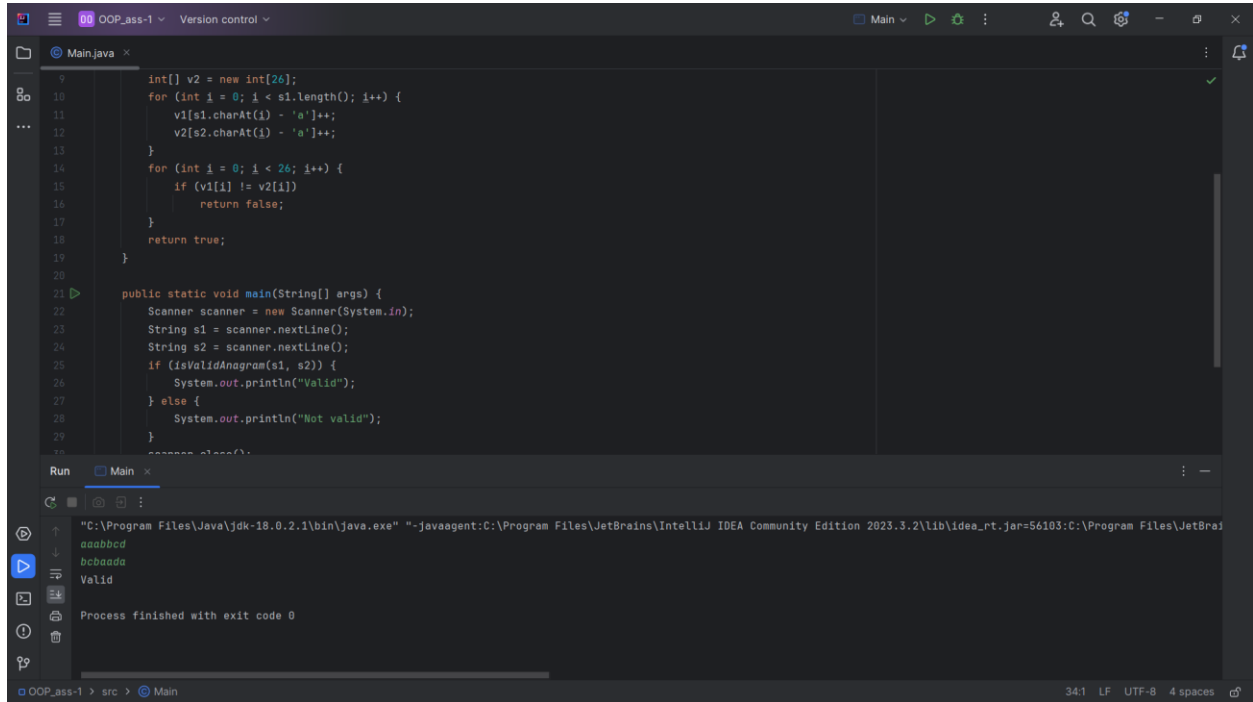
public class Main {

    public static boolean isValidAnagram(String s1, String s2) {
        if (s1.length() != s2.length())
            return false;
        int[] v1 = new int[26];
        int[] v2 = new int[26];
        for (int i = 0; i < s1.length(); i++) {
            v1[s1.charAt(i) - 'a']++;
            v2[s2.charAt(i) - 'a']++;
        }
        for (int i = 0; i < 26; i++) {
            if (v1[i] != v2[i])
                return false;
        }
        return true;
    }

    public static void main(String[] args) {
        Scanner scanner = new Scanner(System.in);
        String s1 = scanner.nextLine();
        String s2 = scanner.nextLine();
        if (isValidAnagram(s1, s2)) {
            System.out.println("Valid");
        } else {
```

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```
        System.out.println("Not valid");
    }
    scanner.close();
}
}
```



The screenshot shows an IDE window titled 'Main.java' with the following code:

```
9      int[] v2 = new int[26];
10     for (int i = 0; i < s1.length(); i++) {
11         v1[s1.charAt(i) - 'a']++;
12         v2[s2.charAt(i) - 'a']++;
13     }
14     for (int i = 0; i < 26; i++) {
15         if (v1[i] != v2[i])
16             return false;
17     }
18     return true;
19 }
20
21 public static void main(String[] args) {
22     Scanner scanner = new Scanner(System.in);
23     String s1 = scanner.nextLine();
24     String s2 = scanner.nextLine();
25     if (isValidAnagram(s1, s2)) {
26         System.out.println("Valid");
27     } else {
28         System.out.println("Not valid");
29     }
30     scanner.close();
31 }
```

The Run window shows the output:

```
asabbdcd
bcbadada
Valid
Process finished with exit code 0
```

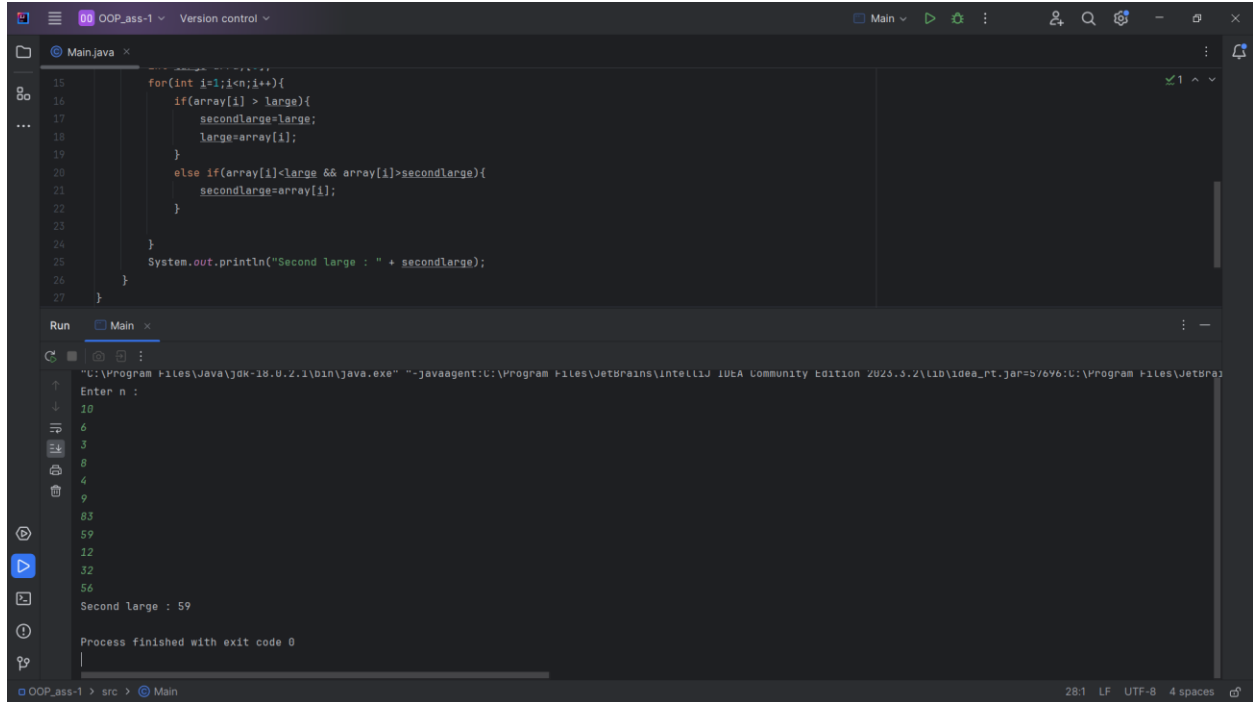
11)

```
import java.util.Scanner;
import java.lang.String;

public class Main {
    public static void main(String[] args) {
        Scanner sc = new Scanner(System.in);
        System.out.println("Enter n : ");
        int n = sc.nextInt();
        int[] array = new int[100];
        for (int i = 0; i < n; i++) {
            array[i] = sc.nextInt();
        }
        int secondlarge=0;
        int large=array[0];
        for(int i=1;i<n;i++){
            if(array[i] > large){
                secondlarge=large;
                large=array[i];
            }
            else if(array[i]<large && array[i]>secondlarge){
                secondlarge=array[i];
            }
        }
    }
}
```

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```
    }  
    System.out.println("Second large : " + secondlarge);  
}  
}
```



The screenshot shows an IDE window with a file named 'Main.java'. The code in the editor is as follows:

```
15 for(int i=1;i<n;i++){  
16     if(array[i] > large){  
17         secondlarge=large;  
18         large=array[i];  
19     }  
20     else if(array[i]<large && array[i]>secondlarge){  
21         secondlarge=array[i];  
22     }  
23 }  
24 System.out.println("Second large : " + secondlarge);  
25 }  
26 }  
27 }
```

Below the editor is a 'Run' console window. It shows the command executed: `"C:\Program Files\Java\jdk-18.0.2\bin\java.exe" "-javaagent:C:\Program Files\JetBrains\IntelliJ IDEA Community Edition 2023.3.2\lib\idea_rt.jar=5/6v6:C:\Program Files\JetBrains\IntelliJ IDEA Community Edition 2023.3.2\bin" C:\Program Files\JetBrains\IntelliJ IDEA Community Edition 2023.3.2\bin\java.exe`. The input 'Enter n : 10' is shown, followed by a list of numbers: 6, 3, 8, 4, 9, 83, 59, 12, 32, 56. The output 'Second large : 59' is displayed. At the bottom, it says 'Process finished with exit code 0'.

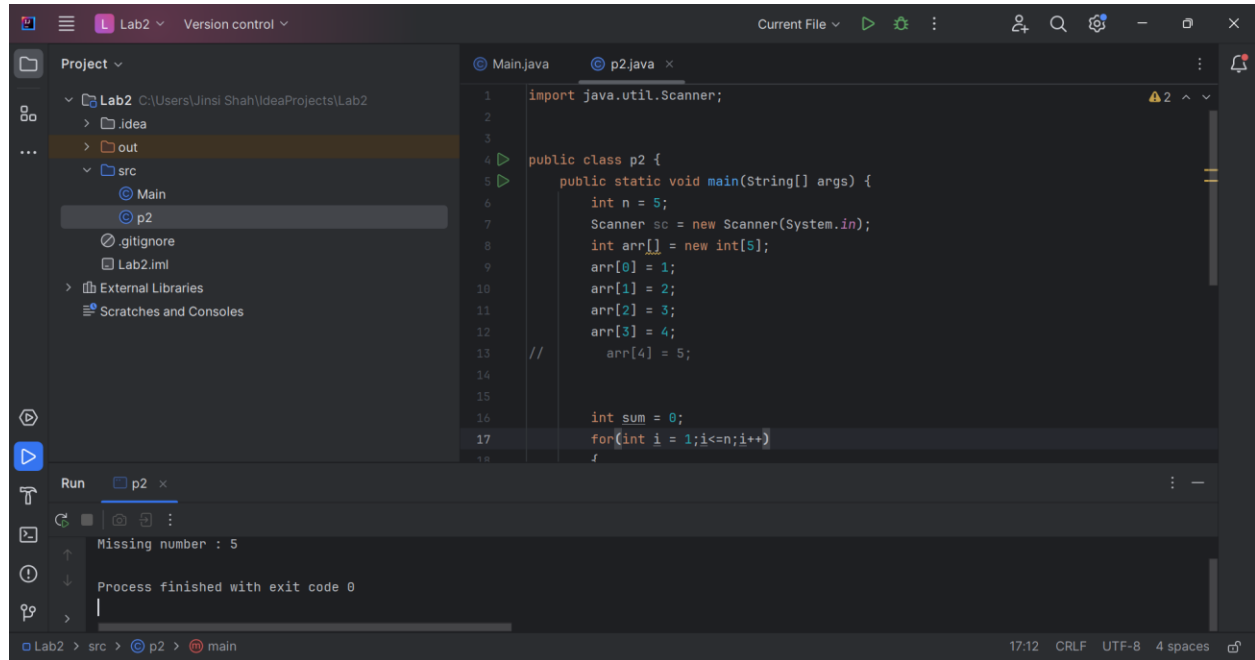
12)

```
import java.util.Scanner;  
  
public class p2 {  
    public static void main(String[] args) {  
        int n = 5;  
        Scanner sc = new Scanner(System.in);  
        int arr[] = new int[5];  
        arr[0] = 1;  
        arr[1] = 2;  
        arr[2] = 3;  
        arr[3] = 4;  
        // arr[4] = 5;  
  
        int sum = 0;  
        for(int i = 1;i<=n;i++){  
            {  
                sum += i;  
            }  
        }  
  
        for(int i = 0;i<n;i++){  
            {
```

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```
        sum = sum - arr[i];  
    }  
    System.out.println("Missing number : " + sum);  
}  
}
```

Output:



The screenshot shows an IDE with a project named 'Lab2'. The 'src' directory contains two files: 'Main' and 'p2'. The 'p2.java' file is open, showing the following code:

```
1 import java.util.Scanner;  
2  
3  
4 public class p2 {  
5     public static void main(String[] args) {  
6         int n = 5;  
7         Scanner sc = new Scanner(System.in);  
8         int arr[] = new int[5];  
9         arr[0] = 1;  
10        arr[1] = 2;  
11        arr[2] = 3;  
12        arr[3] = 4;  
13        // arr[4] = 5;  
14  
15  
16        int sum = 0;  
17        for(int i = 1; i <= n; i++)  
18        {  
19            sum = sum - arr[i];  
20        }  
21        System.out.println("Missing number : " + sum);  
22    }  
23 }
```

The 'Run' tab shows the output: 'Missing number : 5'. Below the output, it says 'Process finished with exit code 0'.