1. **Write a Java Program to reverse a string without using String inbuilt function reverse ().**

```
ReverseStr.java ×   PrimeUpto.java    Palindrome.java    DuplicateChr.java    SecondHighNo.java
 1 //1.Write a Java Program to reverse a string without using String inbuilt function reverse ().
 2
 3 package Milestone1;
 4
 5 import java.util.Scanner;
 6
 7 public class ReverseStr {
 8
 9⊖     public static void main(String[] args)
10      {
11          String str;
12          Scanner sc=new Scanner(System.in);
13          System.out.print("Enter a String: ");
14          str=sc.nextLine();
15          System.out.println("------------------------");
16          System.out.print("After reverse string: ");
17          for(int i=str.length();i>0;--i)
18          {
19              System.out.print(str.charAt(i-1));
20          }
21      }
22
23 }
24
```

```
Problems  @ Javadoc  Declaration  Console ×  Coverage  Call Hierarchy
<terminated> ReverseStr [Java Application] C:\Program Files\Java\jdk-17.0.1\bin\javaw.exe  (Feb 4, 2022, 10:52:25 AM – 10:52:28 AM)
Enter a String: java
------------------------
After reverse string: avaj
```

2. **Write a program to take an input number from the programmer and calculate all the prime numbers from 0 to that number. Store all the prime numbers in an array and display the array elements.**
   Example: Input=10   Output: 1,2,3,5,7

```
 1⊖//2.Write a program to take an input number from the programmer and
 2 //calculate all the prime numbers from 0 to that number.
 3 //Store all the prime numbers in an array and display the array elements.
 4 //Example:Input=10   Output: 1,2,3,5,7
 5
 6 package Milestone1;
 7 import java.util.Scanner;
 8
 9 public class PrimeUpto {
10⊖     public static void main(String[] args) {
11          Scanner sc=new Scanner(System.in);
12          System.out.print("Enter the limit: ");
13          int num=sc.nextInt();
14          int count;
15          int length=0;
16          int[] arr=new int[num];
17          System.out.println("Prime numbers from 0 to "+num);
18          for(int i=1;i<=num;i++)
19          {
20              count=0;
21              for(int j=2;j<=i/2;j++)
22              {
23                  if(i%j==0)
24                      count++;
25              }
26              if(count==0)
27              {
28                  arr[length]=i;
29                  length++;
30              }
31          }
32          System.out.println("--------------------------");
33          System.out.println("Array elements are");
34          for(int i=0;i<length;i++)
35              System.out.print(arr[i]+" ");
36      }
37 }
38
```

```
<terminated> PrimeUpto [Java Application] C:\Program Fi
Enter the limit: 10
Prime numbers from 0 to 10
----------------------------
Array elements are
1 2 3 5 7
```

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Go to Settings to

3. Write a Java Program to find whether a string or number is palindrome or not. Note: input can be a number or a String.

```java
//3.Write a Java Program to find whether a string or number is palindrome or not.
//Note: input can be a number or a String.

package Milestone1;

import java.util.Scanner;

public class Palindrome {

    public static void main(String[] args) {
        System.out.println("enter a string or number");
        Scanner sc=new Scanner(System.in);
        String str=sc.nextLine();
        String rev="";
        int len=str.length();
        for(int i=len-1;i>=0;i--)
            rev=rev+str.charAt(i);
        if(str.equals(rev))
            System.out.println(str+" is palindrome.");
        else
            System.out.println(str+" is not palindrome.");
    }
}
```

Problems @ Javadoc Declaration Console × Coverage Call Hierarchy
`<terminated> Palindrome (1) [Java Application] C:\Program Files\Java\jdk-17.0.1\bin\javaw.exe (Feb 4, 2022, 11:01:47 AM – 11:02:21 AM)`
```
enter a string or number
1221
1221 is palindrome.
```

4. Write a Java Program to find the duplicate characters in a string.

```java
//4.Write a Java Program to find the duplicate characters in a string.

package Milestone1;

import java.util.Scanner;

public class DuplicateChr {

    public static void main(String[] args) {
        String str;
        Scanner sc=new Scanner(System.in);
        System.out.print("Enter a String: ");
        str=sc.nextLine();
        int count;
        char s[]=str.toCharArray();
        System.out.println("Duplicate characters in given string are ");
        for(int i = 0; i <s.length; i++)
        {
            count = 1;
            for(int j = i+1; j <s.length; j++)
            {
                if(s[i] == s[j] && s[i] != ' ')
                {
                    count++;
                    s[j] = '0';
                }
            }
            if(count > 1 && s[i] != '0')
                System.out.println(s[i]);
        }

    }
}
```

Problems @ Javadoc Declarat... Console × Coverage
`<terminated> DuplicateChr [Java Application] C:\Program Files\Java\jdk`
```
Enter a String: Java Programming
Duplicate characters in given string are
a
r
g
m
```

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5. Write a Java Program to find the second-highest number in an array.

```java
1 //5.Write a Java Program to find the second-highest number in an array.
2
3 package Milestone1;
4
5 public class SecondHighNo {
6
7⊖    public static void main(String[] args) {
8         int temp, size;
9         int arr[] = {12,26,5,16,9,27,8,11,19};
10        size = arr.length;
11        System.out.print("Given array : ");
12        for(int i=0;i<size;i++)
13            System.out.print(arr[i]+" ");
14
15        for(int i = 0; i<size; i++ )
16        {
17            for(int j = i+1; j<size; j++)
18            {
19                if(arr[i]>arr[j])
20                {
21                    temp = arr[i];
22                    arr[i] = arr[j];
23                    arr[j] = temp;
24                }
25            }
26        }
27        System.out.println();
28        System.out.println("second-highest number is:: "+arr[size-2]);
29    }
30
31 }
32
```

```
<terminated> SecondHighNo [Java Application] C:\Program Files\Java
Given array : 12 26 5 16 9 27 8 11 19
second-highest number is:: 26
```
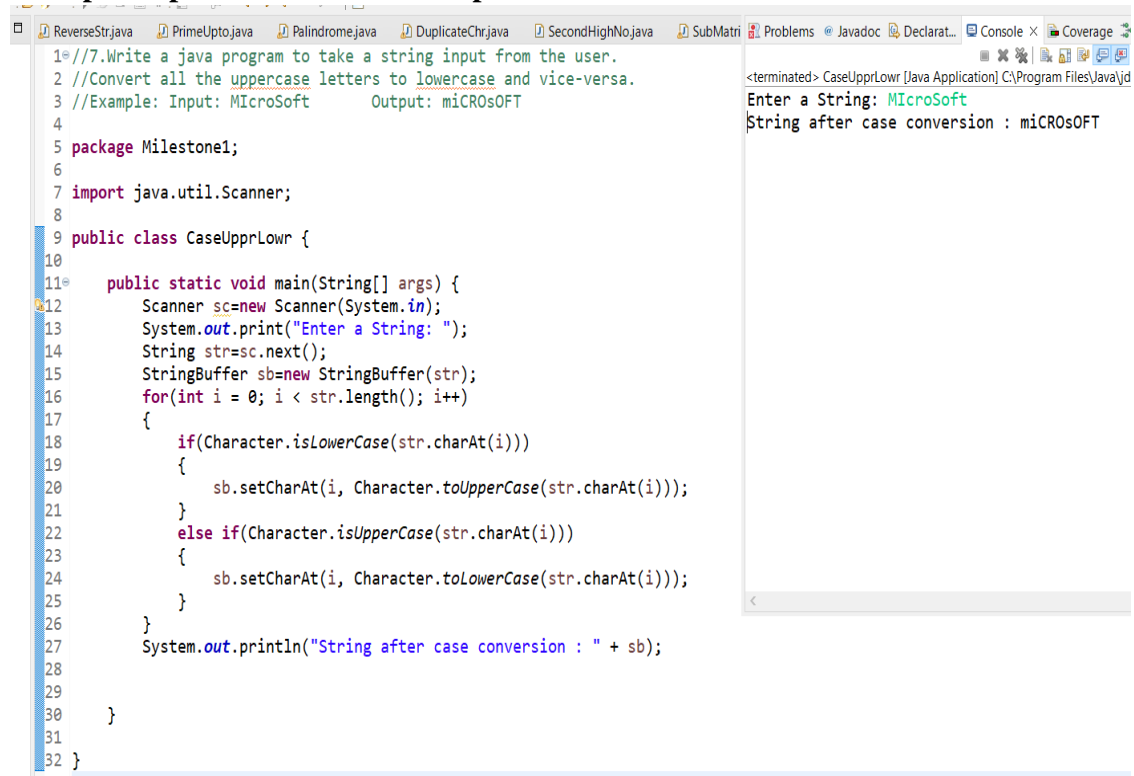
6. Write a java program to subtract two matrices. Take the input of the matrices from the user.

```java
1⊖//6.Write a java program to subtract two matrices.
2 //Take the input of the matrices from the user.
3
4 package Milestone1;
5 import java.util.Scanner;
6
7 public class SubMatrices {
8⊖    public static void main(String[] args) {
9         Scanner sc=new Scanner(System.in);
10        System.out.println("enter the size of integer array");
11        int size=sc.nextInt();
12
13        int[] arr1=new int[size];
14        int[] arr2=new int[size];
15        int[] arr3=new int[size];
16
17        System.out.println("enter elements of 1st array");
18        for(int i=0;i<size;i++)
19            arr1[i]=sc.nextInt();
20
21        System.out.println("enter elements of 2nd array");
22        for(int i=0;i<size;i++)
23            arr2[i]=sc.nextInt();
24
25        for(int i=0;i<size;i++)
26            arr3[i]=arr1[i]-arr2[i];
27
28        System.out.println("Difference of array elements ");
29        for(int j=0;j<size;j++)
30            System.out.print(arr3[j]+" ");
31    }
32 }
33
```

```
<terminated> SubMatrices [Java Application] C:\Program Files\Java\j
enter the size of integer array
5
enter elements of 1st array
12
8
6
15
7
enter elements of 2nd array
10
6
5
9
2
Difference of array elements
2 2 1 6 5
```

7. **Write a java program to take a string input from the user. Convert all the uppercase letters to lowercase and vice-versa.**
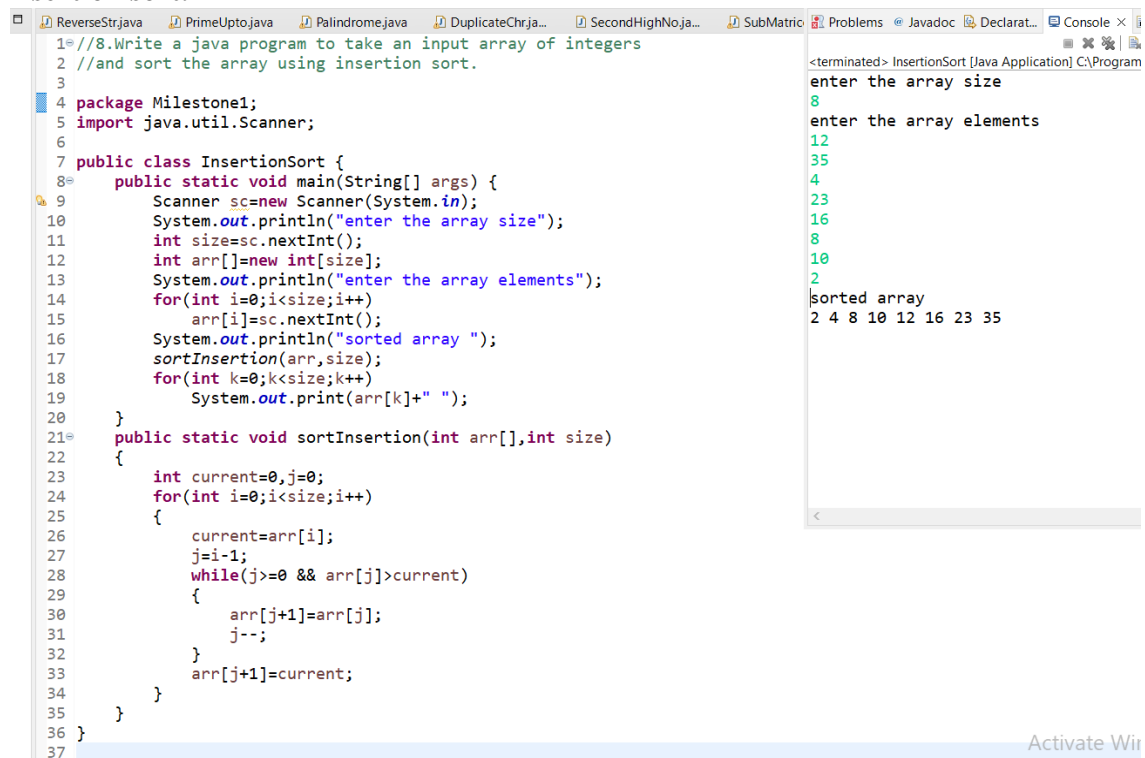   **Example: Input: MIcroSoft   Output: miCROsOFT**

```java
//7.Write a java program to take a string input from the user.
//Convert all the uppercase letters to lowercase and vice-versa.
//Example: Input: MIcroSoft        Output: miCROsOFT

package Milestone1;

import java.util.Scanner;

public class CaseUpprLowr {

    public static void main(String[] args) {
        Scanner sc=new Scanner(System.in);
        System.out.print("Enter a String: ");
        String str=sc.next();
        StringBuffer sb=new StringBuffer(str);
        for(int i = 0; i < str.length(); i++)
        {
            if(Character.isLowerCase(str.charAt(i)))
            {
                sb.setCharAt(i, Character.toUpperCase(str.charAt(i)));
            }
            else if(Character.isUpperCase(str.charAt(i)))
            {
                sb.setCharAt(i, Character.toLowerCase(str.charAt(i)));
            }
        }
        System.out.println("String after case conversion : " + sb);

    }

}
```

```
<terminated> CaseUpprLowr [Java Application] C:\Program Files\Java\jd
Enter a String: MIcroSoft
String after case conversion : miCROsOFT
```

8. **Write a java program to take an input array of integers and sort the array using insertion sort.**

```java
//8.Write a java program to take an input array of integers
//and sort the array using insertion sort.

package Milestone1;
import java.util.Scanner;

public class InsertionSort {
    public static void main(String[] args) {
        Scanner sc=new Scanner(System.in);
        System.out.println("enter the array size");
        int size=sc.nextInt();
        int arr[]=new int[size];
        System.out.println("enter the array elements");
        for(int i=0;i<size;i++)
            arr[i]=sc.nextInt();
        System.out.println("sorted array ");
        sortInsertion(arr,size);
        for(int k=0;k<size;k++)
            System.out.print(arr[k]+" ");
    }
    public static void sortInsertion(int arr[],int size)
    {
        int current=0,j=0;
        for(int i=0;i<size;i++)
        {
            current=arr[i];
            j=i-1;
            while(j>=0 && arr[j]>current)
            {
                arr[j+1]=arr[j];
                j--;
            }
            arr[j+1]=current;
        }
    }
}
```

```
<terminated> InsertionSort [Java Application] C:\Program
enter the array size
8
enter the array elements
12
35
4
23
16
8
10
2
sorted array
2 4 8 10 12 16 23 35
```

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9. **Write a java program to take an input array of integers and search for a particular number given by the user. Use binary search algorithm.**

```java
5
6 import java.util.Scanner;
7 public class BinarySearch {
8      static int binarySearch(int a[], int beg, int end, int val)
9      {
10         int mid;
11         if(end >= beg)
12         {
13             mid = (beg + end)/2;
14             if(a[mid] == val)
15                 return mid+1;
16             else if(a[mid] < val)
17                 return binarySearch(a, mid+1, end, val);
18             else
19                 return binarySearch(a, beg, mid-1, val);
20         }
21         return -1;
22     }
23
24     public static void main(String[] args) {
25         Scanner sc=new Scanner(System.in);
26         System.out.println("enter the array size");
27         int size=sc.nextInt();
28         int a[]=new int[size];
29         int n=a.length;
30         System.out.println("enter the array elements");
31         for(int i=0;i<n;i++)
32             a[i]=sc.nextInt();
33         System.out.println("enter the Element to be searched");
34         int val=sc.nextInt();
35         int res = binarySearch(a, 0, n-1, val);
36         if (res == -1)
37             System.out.println("Element is not present in the array");
38         else
39             System.out.println("Element "+val+" is present at position "+ res +" of the array");
40     }
41 }
42
```
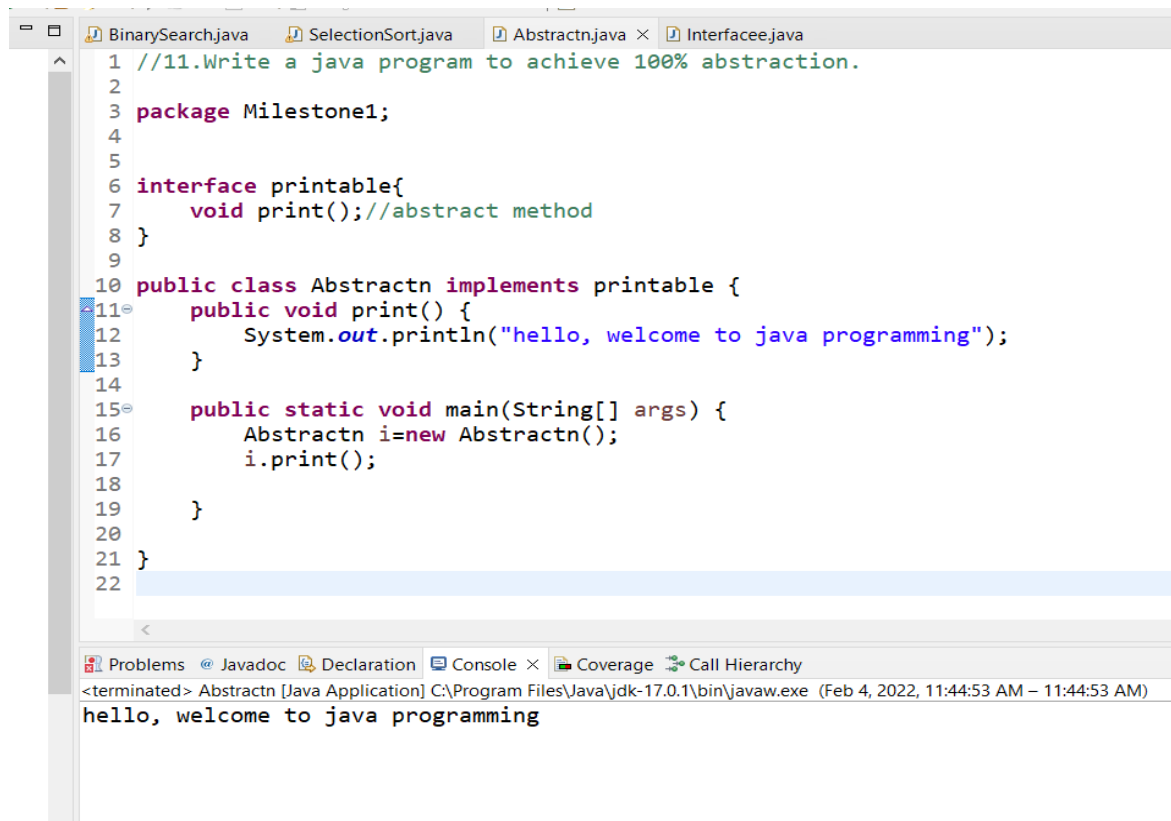
```
<terminated> BinarySearch (1) [Java Application] C:\Program Files\Java\jdk-17.0.1\bi
enter the array size
7
enter the array elements
6
10
15
19
23
29
32
enter the Element to be searched
23
Element 23 is present at position 5 of the array
```

10. **Write a java program to take an input array of integers and sort the elements in a descending order using selection sort.**

```java
4 import java.util.Scanner;
5 public class SelectionSort {
6      void Sort(int arr[]){
7          int n=arr.length;
8          for(int i=0;i<n-1;i++)
9          {
10             int min=i;
11             for(int j=i+1;j<n;j++)
12             {
13                 if(arr[j]>arr[min])
14                     min=j;
15             }
16             int temp=arr[min];
17             arr[min]=arr[i];
18             arr[i]=temp;
19         }
20     }
21     void printArray(int arr[]){
22         int n=arr.length;
23         for(int i=0;i<n;i++)
24             System.out.print(arr[i] + " ");
25         System.out.println();
26     }
27     public static void main(String[] args) {
28         Scanner sc=new Scanner(System.in);
29         System.out.println("enter the array size");
30         int size=sc.nextInt();
31         int arr[]=new int[size];
32         System.out.println("enter the array elements");
33         for(int i=0;i<arr.length;i++)
34             arr[i]=sc.nextInt();
35         SelectionSort ob=new SelectionSort();
36         ob.Sort(arr);
37         System.out.println("sorted array");
38         ob.printArray(arr);
39     }
40 }
41
```

```
<terminated> SelectionSort [Java Application] C:\Program
enter the array size
8
enter the array elements
6
12
56
9
15
2
41
32
sorted array
56 41 32 15 12 9 6 2
```
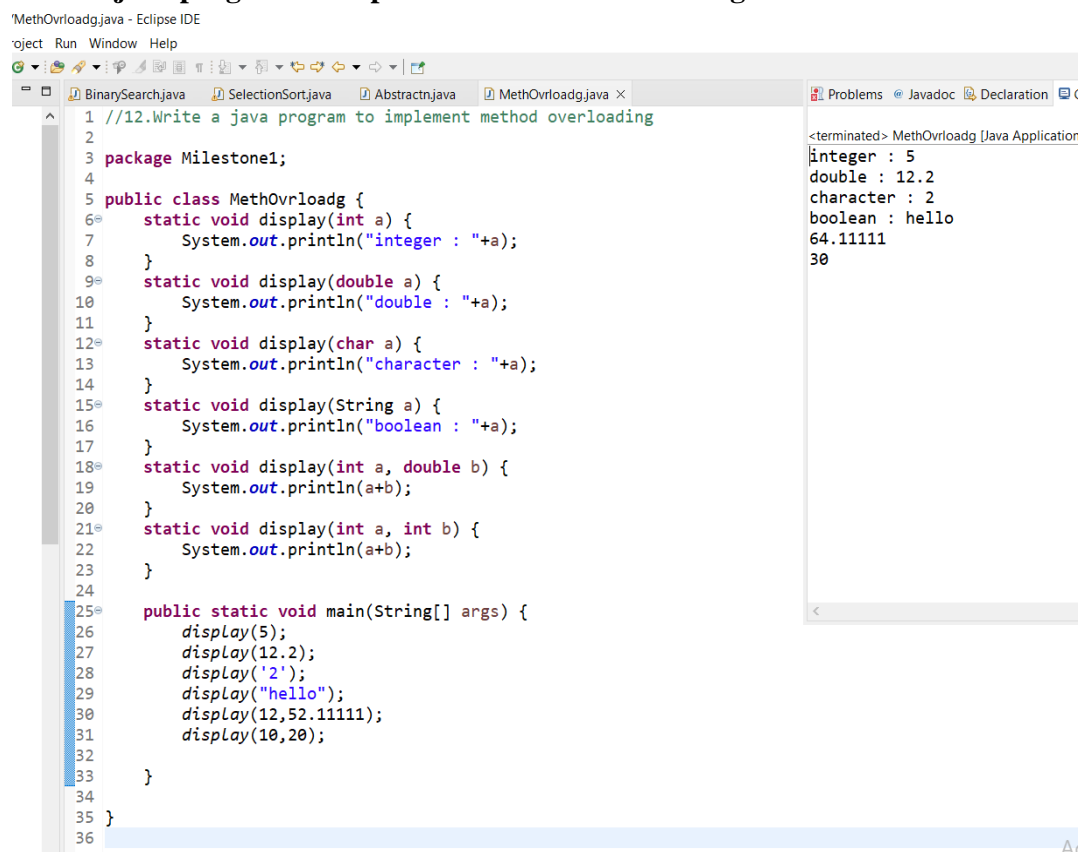
11. Write a java program to achieve 100% abstraction.

```java
1 //11.Write a java program to achieve 100% abstraction.
2
3 package Milestone1;
4
5
6 interface printable{
7     void print();//abstract method
8 }
9
10 public class Abstractn implements printable {
11     public void print() {
12         System.out.println("hello, welcome to java programming");
13     }
14
15     public static void main(String[] args) {
16         Abstractn i=new Abstractn();
17         i.print();
18
19     }
20
21 }
22
```

Problems   @ Javadoc   Declaration   Console ×   Coverage   Call Hierarchy
<terminated> Abstractn [Java Application] C:\Program Files\Java\jdk-17.0.1\bin\javaw.exe (Feb 4, 2022, 11:44:53 AM – 11:44:53 AM)
```
hello, welcome to java programming
```

12. Write a java program to implement method overloading.

BinarySearch.java   SelectionSort.java   Abstractn.java   MethOvrloadg.java ×

```java
1 //12.Write a java program to implement method overloading
2
3 package Milestone1;
4
5 public class MethOvrloadg {
6     static void display(int a) {
7         System.out.println("integer : "+a);
8     }
9     static void display(double a) {
10        System.out.println("double : "+a);
11    }
12    static void display(char a) {
13        System.out.println("character : "+a);
14    }
15    static void display(String a) {
16        System.out.println("boolean : "+a);
17    }
18    static void display(int a, double b) {
19        System.out.println(a+b);
20    }
21    static void display(int a, int b) {
22        System.out.println(a+b);
23    }
24
25    public static void main(String[] args) {
26        display(5);
27        display(12.2);
28        display('2');
29        display("hello");
30        display(12,52.11111);
31        display(10,20);
32
33    }
34
35 }
36
```

Problems   @ Javadoc   Declaration

<terminated> MethOvrloadg [Java Application
```
integer : 5
double : 12.2
character : 2
boolean : hello
64.11111
30
```

13. Write a java program to implement method overriding.

```java
//13.Write a java program to implement method overriding.

package Milestone1;

class Bike{
    void run() {
        System.out.println("bike is running");
    }
}
class Splender extends Bike{
    void run() {
        System.out.println("splender is running");
    }
}

public class MetOverrdng {

    public static void main(String[] args) {
        Bike b=new Splender();
        b.run();

    }
}
```

Problems @ Javadoc Declaration Console × Coverage Call Hierarchy
<terminated> MetOverrdng [Java Application] C:\Program Files\Java\jdk-17.0.1\bin\javaw.exe (Feb 4, 2022, 11:55:34 AM – 11:55:34 AM)
```
splender is running
```

14. Write a java program to implement Hybrid Inheritance.

```java
//14.Write a java program to implement Hybrid Inheritance.

package Milestone1;

class Animal
{
    void eat()
    {
        System.out.println("Animal eating..");
    }
}

//hierarchical inheritance
class Cat extends Animal{
    void eat() {
        System.out.println("cat eating..");
    }
}
class Dog2 extends Animal{
    void eat() {
        System.out.println("dod eating ..");
    }
}

//single inheritance
public class HybridInher extends Animal{
    public void eat()
    {
        System.out.println("eating..");
    }

    public static void main(String[] args) {
        HybridInher obj = new HybridInher();
        obj.eat();

    }
}
```

Proble... @ Javad... Declar... C
<terminated> HybridInher [Java Applicatio
```
eating..
```

15. Write a java program to implement multilevel inheritance.

```java
1 //15.Write a java program to implement multilevel inheritance.
2
3 package Milestone1;
4
5 class Animals
6 {
7     public void display() {
8         System.out.println("Animal class is invoked");
9     }
10 }
11 class Dogs extends Animals{
12     public void bark()
13     {
14         System.out.println("Dog is barking");
15     }
16 }
17 class BabyDog extends Dogs{
18     public void weep()
19     {
20         System.out.println("BabyDog is weeping");
21     }
22 }
23
24 public class MultiLeveInheri {
25
26     public static void main(String[] args) {
27         BabyDog d=new BabyDog();
28         d.weep();
29         d.bark();
30         d.display();
31
32     }
33 }
34
```

```
<terminated> MultiLevelnheri [Java Application] C:\Prog
BabyDog is weeping
Dog is barking
Animal class is invoked
```

16. Write a java program to take input of integer array elements from the user and divide each element by the smallest element of the array and store the result in a resultant array. Implement Try- catch-finally block to counter null pointer divide by zero error.

```java
7 import java.util.Scanner;
8 public class DivideArry {
9     public static void main(String[] args) {
10         Scanner sc=new Scanner(System.in);
11         try{
12             System.out.println("enter array size");
13             int size=sc.nextInt();
14             int[] arr=new int[size];
15             int[] arr1=new int[size];
16             System.out.println("enter array elements ");
17             for(int i=0;i<size;i++)
18                 arr[i]=sc.nextInt();
19             System.out.println("array elements are");
20             for(int i=0;i<size;i++)
21                 System.out.print(arr[i]+" ");
22             System.out.println();
23             System.out.println("--------------------------------");
24             int temp=arr[0];
25             for(int i=0;i<size;i++){
26                 if(arr[i]<temp){
27                     temp=arr[i];}    }
28             System.out.println("smallest element "+temp);
29             System.out.println("--------------------------------");
30             System.out.println("resultant array after divide by smallest element "+temp+" is");
31             for(int i=0;i<size;i++){
32                 arr[i]=arr[i]/temp;
33                 System.out.print(arr[i]+" ");}
34         }
35         catch(ArithmeticException e){
36             System.out.println("zero error "+e);}
37         finally{
38             System.out.println();
39             System.out.println("-------------------------------------");
40             System.out.println("finished");
41         }
42     }
43 }
```

```
<terminated> DivideArry [Java Application] C:\Program Files\Java\jdk-17.0.1\bin\javaw.exe  (Feb
enter array size
5
enter array elements
8
2
10
6
4
array elements are
8 2 10 6 4
--------------------------------
smallest element 2
--------------------------------
resultant array after divide by smallest element 2 is
4 1 5 3 2
-------------------------------------
finished
```

17. Write a java program to implement a constructor of the class, to print the instance variables value with respect to different objects.

```java
1 //17.Write a java program to implement a constructor of the class,
2 //to print the instance variables value with respect to different objects.
3
4 package Milestone1;
5
6 class Student{
7     int no;
8     String name;
9
10     Student(String name,int no){
11         System.out.println("constructor called");
12         this.name=name;
13         this.no=no;
14     }
15 }
16
17 public class Constructor {
18
19     public static void main(String[] args) {
20         Student s=new Student("fasina",121);
21         System.out.println("name :"+s.name);
22         System.out.println("No :"+s.no);
23     }
24 }
25
```

Problems @ Javadoc Declaration Console × Coverage Call Hierarchy
<terminated> Constructor [Java Application] C:\Program Files\Java\jdk-17.0.1\bin\javaw.exe (Feb 6, 2022, 8:34:57 PM – 8:34:57 PM)

```
constructor called
name :fasina
No :121
```

18. Write a java program to create a File at a particular location and to write to that particular file a String data which is taken as input from the user.
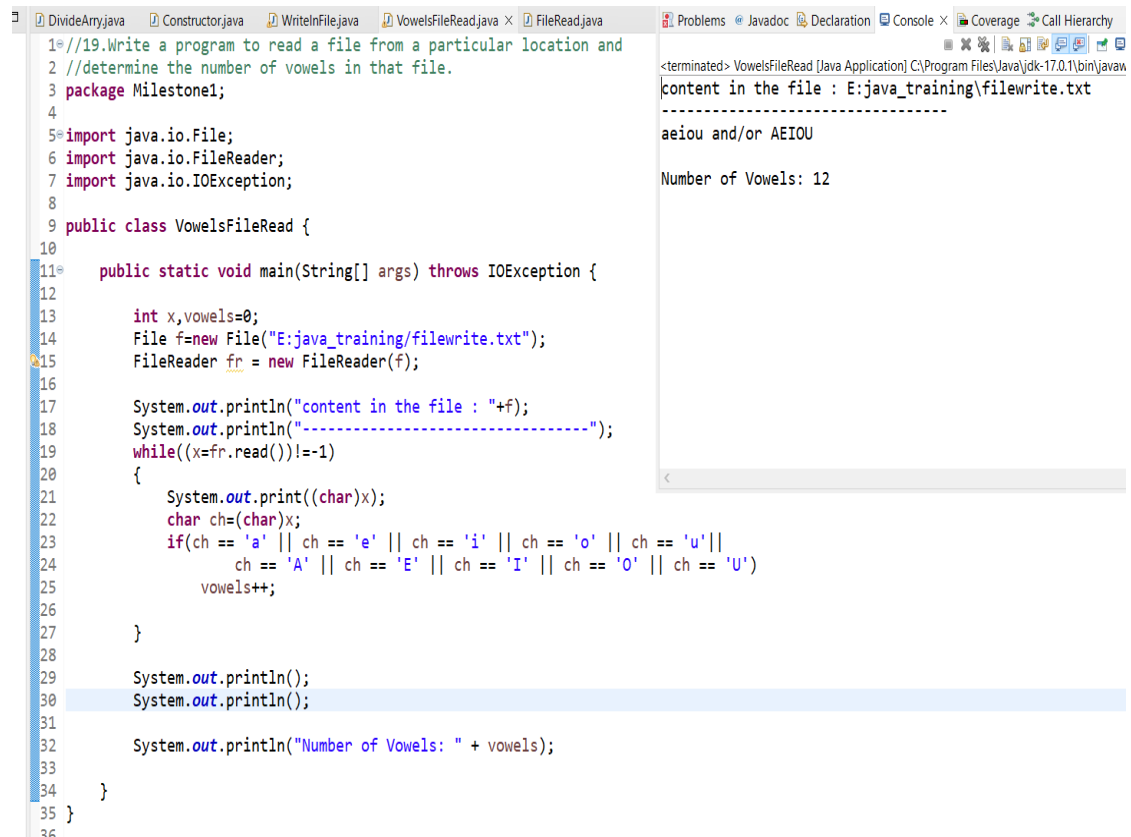
```java
1 //18.Write a java program to create a File at a particular location and to write
3
4 package Milestone1;
5
6 import java.io.File;
10
11 public class WriteInFile {
12
13     public static void main(String[] args) throws IOException {
14         System.out.println("enter something.....");
15         Scanner sc=new Scanner(System.in);
16         String str=sc.nextLine();
17         File f=new File("E:java_training/filewrite.txt");
18         FileWriter fw=new FileWriter(f);
19         for(int i=0;i<str.length();i++)
20         {
21             fw.write(str.charAt(i));
22         }
23         System.out.println("content has been written to file successfully");
24         fw.close();
25
26     }
27 }
28
```

Problems @ Javadoc Declaration Console × Coverage Call Hierarchy
<terminated> WriteInFile [Java Application] C:\Program Files\Java\jdk-17.0.1\bin\javaw.exe (Feb 4, 2022, 12:47:20 PM – 12:47:47 PM)

```
enter something.....
hello welcome to java programming
content has been written to file successfully
```

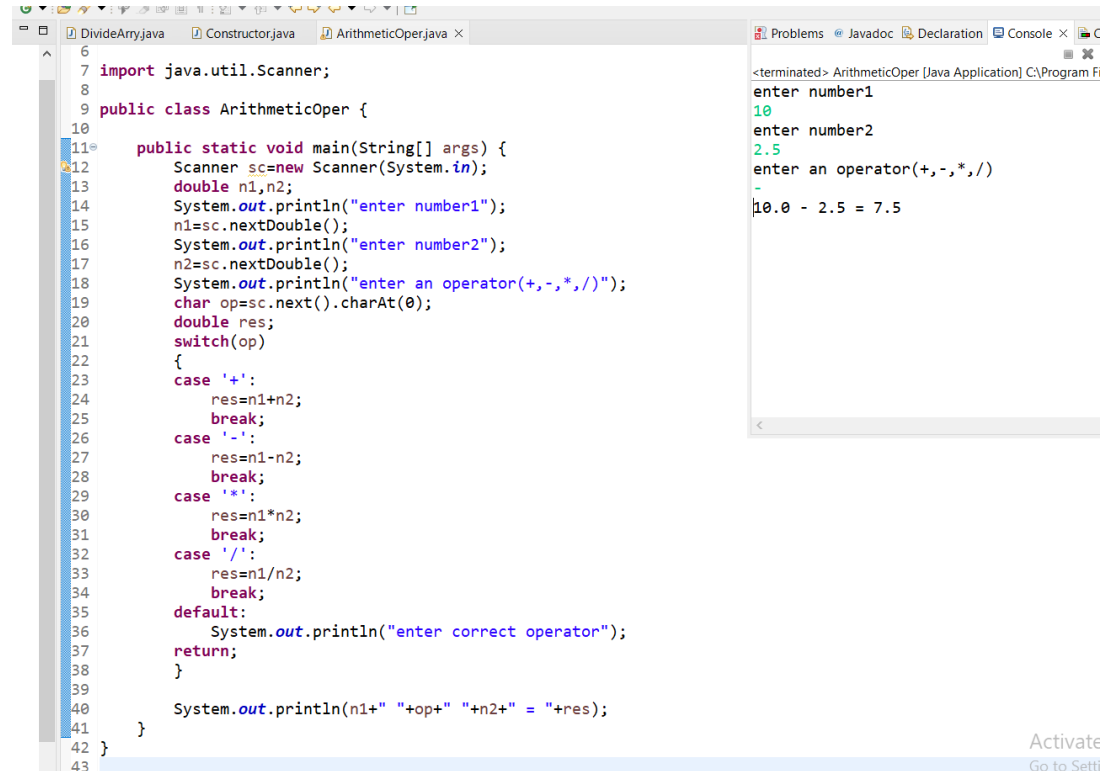## 19. Write a program to read a file from a particular location and determine the number of vowels in that file.

```java
1  //19.Write a program to read a file from a particular location and
2  //determine the number of vowels in that file.
3  package Milestone1;
4
5  import java.io.File;
6  import java.io.FileReader;
7  import java.io.IOException;
8
9  public class VowelsFileRead {
10
11      public static void main(String[] args) throws IOException {
12
13          int x,vowels=0;
14          File f=new File("E:java_training/filewrite.txt");
15          FileReader fr = new FileReader(f);
16
17          System.out.println("content in the file : "+f);
18          System.out.println("--------------------------------");
19          while((x=fr.read())!=-1)
20          {
21              System.out.print((char)x);
22              char ch=(char)x;
23              if(ch == 'a' || ch == 'e' || ch == 'i' || ch == 'o' || ch == 'u' ||
24                  ch == 'A' || ch == 'E' || ch == 'I' || ch == 'O' || ch == 'U')
25                  vowels++;
26
27          }
28
29          System.out.println();
30          System.out.println();
31
32          System.out.println("Number of Vowels: " + vowels);
33
34      }
35  }
36
```

Problems · Javadoc · Declaration · Console × · Coverage · Call Hierarchy

```
<terminated> VowelsFileRead [Java Application] C:\Program Files\Java\jdk-17.0.1\bin\javaw
content in the file : E:java_training\filewrite.txt
--------------------------------
aeiou and/or AEIOU

Number of Vowels: 12
```

20. Write a program to take input of two numbers from the user. Now perform the particular arithmetic operation specified by the user and display the result.
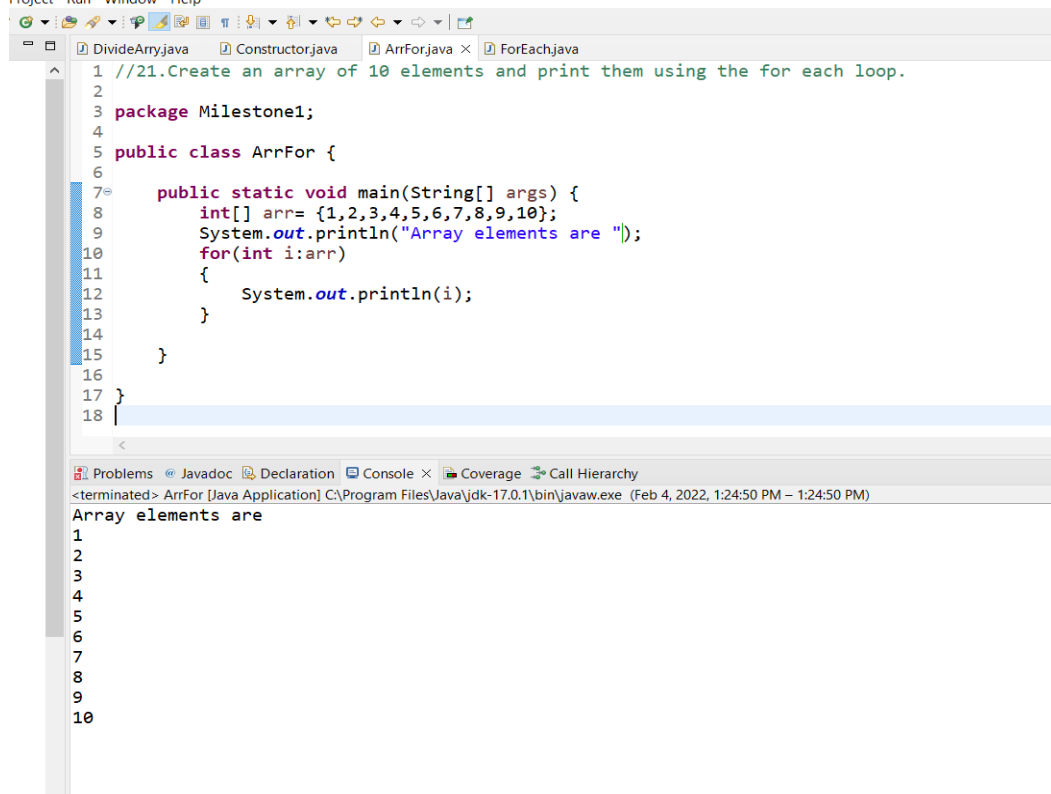Hint: use Switch case.

```java
6
7  import java.util.Scanner;
8
9  public class ArithmeticOper {
10
11      public static void main(String[] args) {
12          Scanner sc=new Scanner(System.in);
13          double n1,n2;
14          System.out.println("enter number1");
15          n1=sc.nextDouble();
16          System.out.println("enter number2");
17          n2=sc.nextDouble();
18          System.out.println("enter an operator(+,-,*,/)");
19          char op=sc.next().charAt(0);
20          double res;
21          switch(op)
22          {
23          case '+':
24              res=n1+n2;
25              break;
26          case '-':
27              res=n1-n2;
28              break;
29          case '*':
30              res=n1*n2;
31              break;
32          case '/':
33              res=n1/n2;
34              break;
35          default:
36              System.out.println("enter correct operator");
37              return;
38          }
39
40          System.out.println(n1+" "+op+" "+n2+" = "+res);
41      }
42  }
43
```

Problems · Javadoc · Declaration · Console × · C

```
<terminated> ArithmeticOper [Java Application] C:\Program F
enter number1
10
enter number2
2.5
enter an operator(+,-,*,/)
-
10.0 - 2.5 = 7.5
```

Activate
Go to Setti

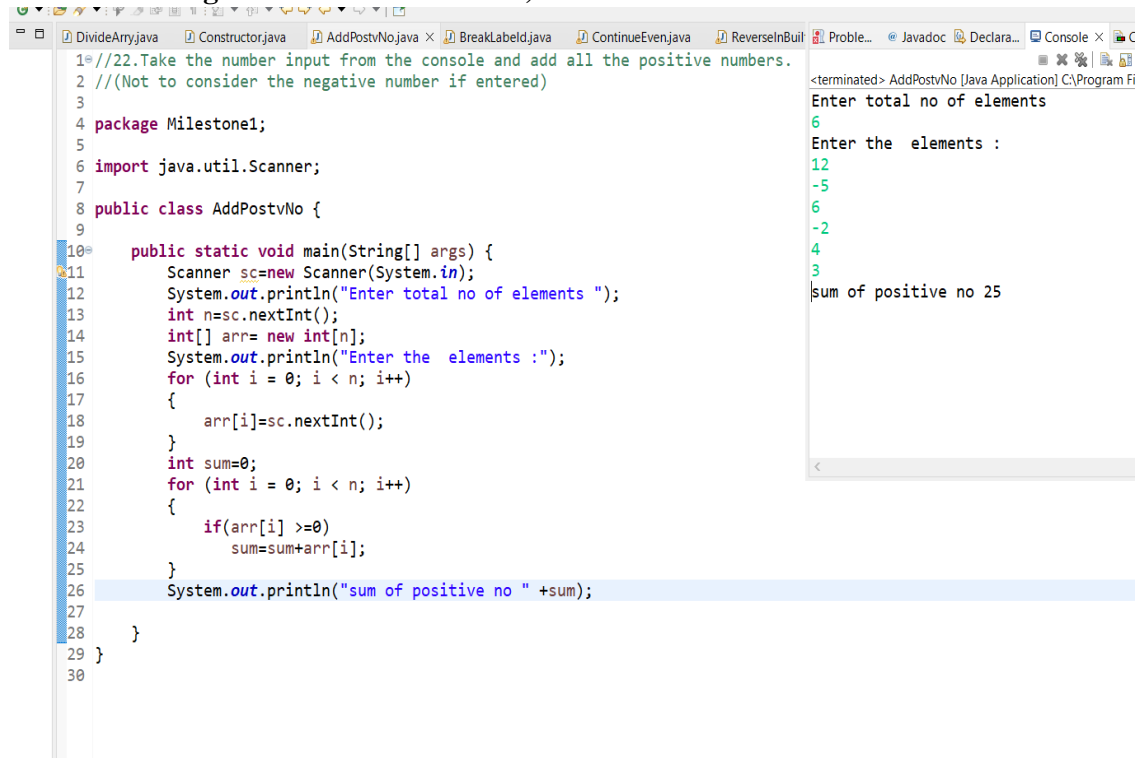**21. Create an array of 10 elements and print them using the for each loop.**

```java
1 //21.Create an array of 10 elements and print them using the for each loop.
2
3 package Milestone1;
4
5 public class ArrFor {
6
7⊖     public static void main(String[] args) {
8         int[] arr= {1,2,3,4,5,6,7,8,9,10};
9         System.out.println("Array elements are ");
10         for(int i:arr)
11         {
12             System.out.println(i);
13         }
14
15     }
16
17 }
18
```

Problems @ Javadoc 🔍 Declaration 🖥 Console × 🍃 Coverage ⬩ Call Hierarchy
<terminated> ArrFor [Java Application] C:\Program Files\Java\jdk-17.0.1\bin\javaw.exe (Feb 4, 2022, 1:24:50 PM – 1:24:50 PM)
```
Array elements are
1
2
3
4
5
6
7
8
9
10
```

22. Take the number input from the console and add all the positive numbers. (Not to consider the negative number if entered)

```java
1⊖//22.Take the number input from the console and add all the positive numbers.
2 //(Not to consider the negative number if entered)
3
4 package Milestone1;
5
6 import java.util.Scanner;
7
8 public class AddPostvNo {
9
10⊖     public static void main(String[] args) {
11         Scanner sc=new Scanner(System.in);
12         System.out.println("Enter total no of elements ");
13         int n=sc.nextInt();
14         int[] arr= new int[n];
15         System.out.println("Enter the  elements :");
16         for (int i = 0; i < n; i++)
17         {
18             arr[i]=sc.nextInt();
19         }
20         int sum=0;
21         for (int i = 0; i < n; i++)
22         {
23             if(arr[i] >=0)
24                 sum=sum+arr[i];
25         }
26         System.out.println("sum of positive no " +sum);
27
28     }
29 }
30
```

<terminated> AddPostvNo [Java Application] C:\Program Fi
```
Enter total no of elements
6
Enter the  elements :
12
-5
6
-2
4
3
sum of positive no 25
```

23. Create a labelled break and write a simple logic and execute the program.

```
1 //23.Create a labelled break and write a simple logic and execute the program.
2
3 package Milestone1;
4
5 public class BreakLabeld {
6
7    public static void main(String[] args) {
8        aa:
9            for(int i=1;i<=3;i++)
10           {
11               bb:
12               for(int j=1;j<=3;j++)
13
14               {
15                   if(i==2&&j==2)
16                   {
17                       break aa; //break aa outerloop
18                   }
19
20                   System.out.println(i+" "+j);
21
22               }
23
24           }
25
26    }
27
28 }
29
```

```
<terminated> BreakLabeld [Java Application] C:\Prc
1 1
1 2
1 3
2 1
```

24. Do the addition of around 10 even numbers, but use the continue statement in the logic.

```
1 //24.Do the addition of around 10 even numbers, but use the continue statement in the logic.
2
3 package Milestone1;
4
5 import java.util.Scanner;
6
7 public class ContinueEven {
8
9    public static void main(String[] args) {
10       int n, i, sum = 0;
11       Scanner sc= new Scanner(System.in);
12       System.out.print(" Please Enter any Number : ");
13       n = sc.nextInt();
14       for(i = 2; i <= n; i++)
15       {
16           if(i % 2 != 0)
17               continue;
18               sum = sum + i;
19       }
20       System.out.println("\n The Sum of Even Numbers upto " + n + "  =  " + sum);
21    }
22 }
23
```

Problems @ Javadoc Declaration Console × Coverage Call Hierarchy
<terminated> ContinueEven [Java Application] C:\Program Files\Java\jdk-17.0.1\bin\javaw.exe (Feb 4, 2022, 2:55:10 PM – 2:55:14 PM)

```
Please Enter any Number : 10

The Sum of Even Numbers upto 10  =  30
```

25. Write a program to reverse the String (use char [] or String built in method)

```java
//25.Write a program to reverse the String (use char [] or String built in method)

package Milestone1;

import java.util.Scanner;

public class ReverseInBuilt {

    public static void main(String[] args) {

        String str;
        Scanner sc=new Scanner(System.in);
        System.out.print("Enter a String: ");
        str=sc.nextLine();
        System.out.println("------------------------");
        System.out.print("After reverse string: ");
        char ch[]=str.toCharArray();
        String rev="";
        for(int i=ch.length-1;i>=0;i--){
            rev+=ch[i];
        }
        System.out.println(rev);
    }
}
```

Problems @ Javadoc Declaration Console × Coverage Call Hierarchy

<terminated> ReverseInBuilt [Java Application] C:\Program Files\Java\jdk-17.0.1\bin\javaw.exe (Feb 4, 2022, 2:57:09 PM – 2:57:37 PM)

```
Enter a String: hello welcome to java programming
------------------------
After reverse string: gnimmargorp avaj ot emoclew olleh
```

26. Write programs to depict the usage of contains (), length (), replace (), concat (), equals ()

```java
//26.Write programs to depict the usage of contains (), length (),
//replace (), concat (), equals ()
package Milestone1;

public class StringMethodhs {

    public static void main(String[] args) {
        String s1="Amazon";
        String s2="Hello";
        String s3="World";
        String s4="good morning";
        System.out.println("contains good in "+s4);
        System.out.println(s4.contains("good"));
        System.out.println("----------------------");
        System.out.println("length of "+s1 +" is ");
        System.out.println(s1.length());
        System.out.println("----------------------");
        System.out.println("replace "+s4 +" to");
        System.out.println(s4.replace("good morning","good afternoon"));
        System.out.println("----------------------");
        System.out.println("concat "+s2+" and "+s3);
        System.out.println(s2.concat(s3));
        System.out.println("----------------------");
        System.out.println(s1+" and "+s2+" are equal");
        System.out.println(s1.equals(s2));

    }

}
```

Problems @ Javadoc Declarati... Console × Covera

<terminated> StringMethodhs [Java Application] C:\Program Files\J

```
contains good in good morning
true
------------------------
length of Amazon is
6
------------------------
replace good morning to
good afternoon
------------------------
concat Hello and World
HelloWorld
------------------------
Amazon and Hello are equal
false
```

27. Create an inheritance class. (Super class as Vehicle and 2 subclasses Car and Bike and inherit the Vehicle class methods)

```java
//27.Create an inheritance class. (Super class as Vehicle and 2
//subclasses Car and Bike and inherit the Vehicle class methods)

package Milestone1;

class Vehicle{
    void run() {
        System.out.println("vehicle running");
    }
}
class Car extends Vehicle{
    void run() {
        System.out.println("car running");
    }
}
class Bike extends Vehicle{
    void run() {
        System.out.println("bike running");
    }
}
public class Inheritance {

    public static void main(String[] args) {
        Vehicle v;
        v=new Car();
        v.run();
        v=new Bike();
        v.run();

    }
}
```
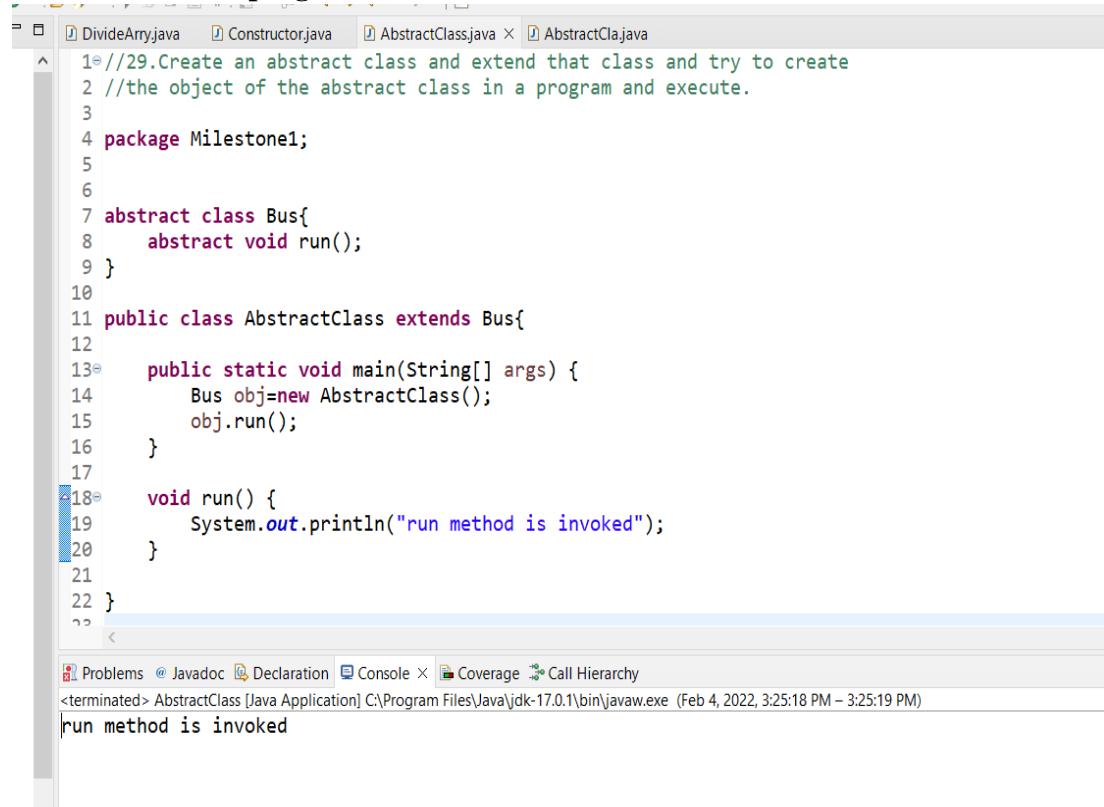
Console output:
```
<terminated> Inheritance [Java Application] C:\Prog
car running
bike running
```

28. Depict programmatically the Method overloading and Method overriding concepts.

```java
//28.Depict programmatically the Method overloading and Method overriding cc

package Milestone1;

class Bikes{
    void run() {
        System.out.println("bike is running");
    }
}
class Splenders extends Bikes{
    void run() {
        System.out.println("splender is running");
    }
}
public class Polymorphism {
    static void display(int a) {
        System.out.println("a = "+a);
    }
    static void display(double a) {
        System.out.println("a = "+a);
    }
    public static void main(String[] args) {

        Bikes b=new Splenders();
        b.run();
        display(20.4561);
        display(6);

    }
}
```

Console output:
```
<terminated> Polymorphism [Java Application
splender is running
a = 20.4561
a = 6
```

29. Create an abstract class and extend that class and try to create the object of the abstract class in a program and execute.

```
 DivideArry.java    Constructor.java    AbstractClass.java ×    AbstractCla.java
 1 //29.Create an abstract class and extend that class and try to create
 2 //the object of the abstract class in a program and execute.
 3
 4 package Milestone1;
 5
 6
 7 abstract class Bus{
 8     abstract void run();
 9 }
10
11 public class AbstractClass extends Bus{
12
13     public static void main(String[] args) {
14         Bus obj=new AbstractClass();
15         obj.run();
16     }
17
18     void run() {
19         System.out.println("run method is invoked");
20     }
21
22 }
```
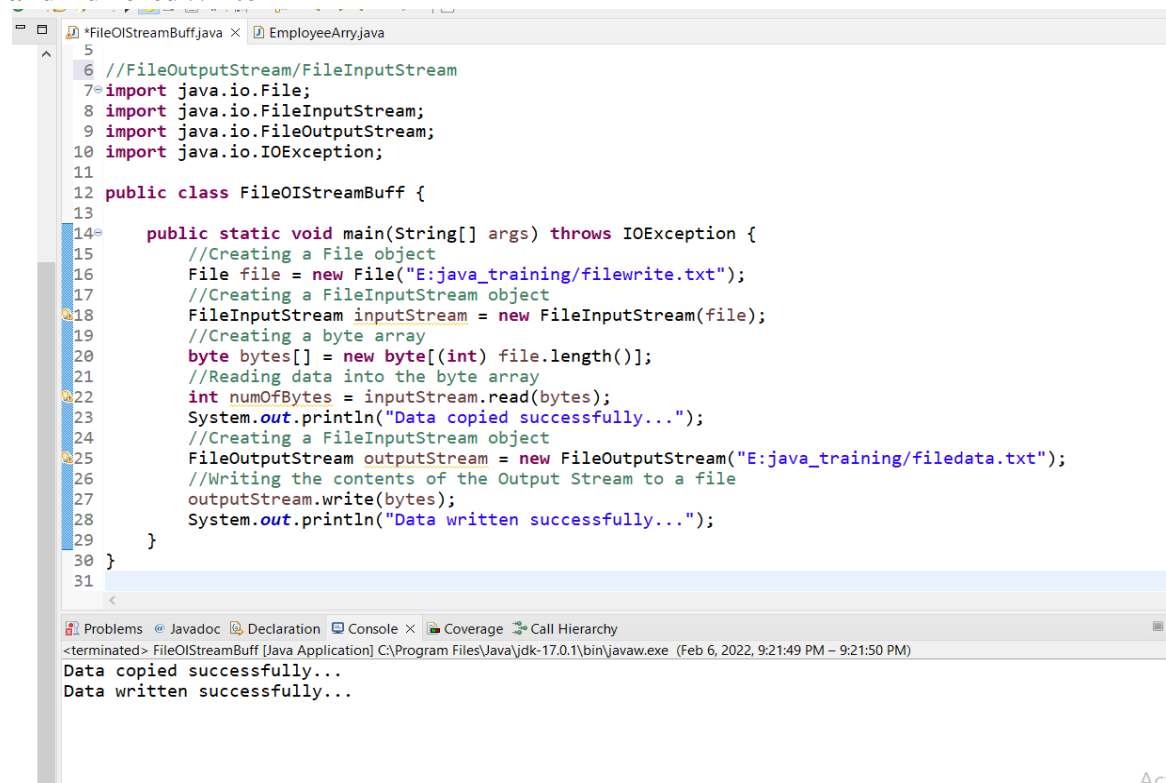
Problems @ Javadoc Declaration Console × Coverage Call Hierarchy
<terminated> AbstractClass [Java Application] C:\Program Files\Java\jdk-17.0.1\bin\javaw.exe (Feb 4, 2022, 3:25:18 PM – 3:25:19 PM)
```
run method is invoked
```

30. Write a java program to write the data into a file and read back using FileOutputStream/FileInputStream and also try the same using the BufferedReader and BufferedWriter

```
 *FileOIStreamBuff.java ×    EmployeeArry.java
 5
 6 //FileOutputStream/FileInputStream
 7 import java.io.File;
 8 import java.io.FileInputStream;
 9 import java.io.FileOutputStream;
10 import java.io.IOException;
11
12 public class FileOIStreamBuff {
13
14     public static void main(String[] args) throws IOException {
15         //Creating a File object
16         File file = new File("E:java_training/filewrite.txt");
17         //Creating a FileInputStream object
18         FileInputStream inputStream = new FileInputStream(file);
19         //Creating a byte array
20         byte bytes[] = new byte[(int) file.length()];
21         //Reading data into the byte array
22         int numOfBytes = inputStream.read(bytes);
23         System.out.println("Data copied successfully...");
24         //Creating a FileInputStream object
25         FileOutputStream outputStream = new FileOutputStream("E:java_training/filedata.txt");
26         //Writing the contents of the Output Stream to a file
27         outputStream.write(bytes);
28         System.out.println("Data written successfully...");
29     }
30 }
31
```

Problems @ Javadoc Declaration Console × Coverage Call Hierarchy
<terminated> FileOIStreamBuff [Java Application] C:\Program Files\Java\jdk-17.0.1\bin\javaw.exe (Feb 6, 2022, 9:21:49 PM – 9:21:50 PM)
```
Data copied successfully...
Data written successfully...
```

Ac

```java
 2
 3  //BufferedReader and BufferedWriter
 4  import java.io.BufferedReader;
 5  import java.io.BufferedWriter;
 6  import java.io.File;
 7  import java.io.FileReader;
 8  import java.io.FileWriter;
 9  import java.io.IOException;
10
11  public class BufferedReaderWri {
12
13      public static void main(String[] args) {
14          try
15          {
16              FileWriter fw = new FileWriter("E:java_training/buffered.txt");
17              BufferedWriter WriteFileBuffer = new BufferedWriter(fw);
18              //Write Some Text to File Using Buffered Writer
19              WriteFileBuffer.write("First Line");
20              WriteFileBuffer.newLine();
21              WriteFileBuffer.write("Second Line");
22              WriteFileBuffer.newLine();
23              WriteFileBuffer.write("Third Line");
24              WriteFileBuffer.newLine();
25              WriteFileBuffer.close();
26              FileReader fr = new FileReader("E:java_training/buffered.txt");
27              BufferedReader ReadFileBuffer = new  BufferedReader(fr);
28              System.out.println(ReadFileBuffer.readLine());
29              System.out.println(ReadFileBuffer.readLine());
30              System.out.println(ReadFileBuffer.readLine());
31              ReadFileBuffer.close();
32          }
33          catch (IOException Ex)
34          {
35              System.out.println(Ex.getMessage());
36          }
37      }
38 }
39
```

Console output:
```
<terminated> BufferedReaderWri [Java Application] C:\Prog
First Line
Second Line
Third Line
```

31. Write a java program to check the file owner details.

```java
 1  //31.Write a java program to check the file owner details.
 2
 3  package Milestone1;
 4  import java.io.File;
 5
 6  public class FileDetails {
 7
 8      public static void main(String[] args) {
 9          File f1=new File("E:java_training/Filewrite.txt");
10          if(f1.exists())
11          {
12              System.out.println("the file name is : "+f1.getName());
13              System.out.println("is the file writable : "+f1.canWrite());
14              System.out.println("the absoluter path of the file is : "+f1.getAbsolutePath());
15              System.out.println("is the file readable : "+f1.canRead());
16              System.out.println("the size of file in bytes : "+f1.length());
17          }
18          else
19          {
20              System.out.println("file doesnot exist");
21          }
22      }
23 }
24
```

Console output:
```
<terminated> FileDetails [Java Application] C:\Program Files\Java\jdk-17.0.1\bin\javaw.exe (Feb 4, 2022, 3:28:57 PM – 3:28:58 PM)
the file name is : Filewrite.txt
is the file writable : true
the absoluter path of the file is : E:\\java_training\Filewrite.txt
is the file readable : true
the size of file in bytes : 18
```

32. Write a java program to copy data from one file to another file.

```java
//32.Write a java program to copy data from one file to another file.

package Milestone1;

import java.io.File;
import java.io.FileReader;
import java.io.FileWriter;
import java.io.IOException;

public class CopyFileData {

    public static void main(String[] args) throws IOException {
        File f1=new File("E:java_training/Filewrite.txt");
        FileReader fr=new FileReader(f1);
        File f2=new File("E:java_training/Filewritecopy.txt");
        FileWriter fw=new FileWriter(f2);
        int c;
        while((c=fr.read())!=-1)
        {
            fw.write(c);
        }
        System.out.println("copy finished....");
        fr.close();
        fw.close();

    }

}
```

```
<terminated> CopyFileData [Java Application] C:\Pro
copy finished....
```

33. How to add an element at a specific position in an ArrayList (create using <>)

```java
//33.How to add an element at a specific position in an ArrayList
//(create using <>)

package Milestone1;

import java.util.ArrayList;

public class ArrayListAdd {

    public static void main(String[] args) {
        ArrayList<String> sample=new ArrayList<String>();
        sample.add("honda");
        sample.add("maruthi");
        sample.add("ferrari");
        sample.add("audi");
        System.out.println("Array list before adding");
        System.out.println();
        for(String car:sample)
        {
            System.out.println(car);
        }
        System.out.println("------------------------------");
        sample.add(1,"benz");

        System.out.println("Array list after adding ");
        System.out.println();
        for(String car:sample)
        {
            System.out.println(car);
        }

    }

}
```

```
<terminated> ArrayListAdd [Java Application] C:\Program Files\Java\jdk-17.0
Array list before adding

honda
maruthi
ferrari
audi
--------------------------------
Array list after adding

honda
benz
maruthi
ferrari
audi
```

34. Create an array of employee objects and iterate through it and remove the object at the 2nd position.

```java
//34.Create an array of employee objects and iterate
//through it and remove the object at the 2nd position.

package Milestone1;

public class EmployeeArry {
    public static void main(String[] args) {
        Employee[] obj = new Employee[5] ;
        obj[0] = new Employee(121,"Arjun");
        obj[1] = new Employee(122,"Ammu");
        obj[2] = new Employee(123,"Ravi");
        obj[3] = new Employee(124,"Priya");
        obj[4] = new Employee(125,"Riya");
        System.out.println("Employee Details");
        System.out.println("------------------------------------");
        for(int i=0;i<obj.length;i++)
            obj[i].display();
        System.out.println("After removing Employee object at 2nd position");
        System.out.println("------------------------------------");
        for(int i=1;i<obj.length-1;i++)
            obj[i]=obj[i+1];
        for(int i=0;i<obj.length-1;i++)
            obj[i].display();
    }
}

class Employee {
    int eId;
    String ename;
    Employee(int id, String n)  {
        eId = id;
        ename = n;
    }
    public void display()  {
        System.out.print("Employee Id = "+eId + "   " + " Employee Name = "+ename);
        System.out.println();
    }
}
```

Console output:

```
<terminated> EmployeeArry [Java Application] C:\Program Files\Java\jdk-17.0.1\bi
Employee Details
------------------------------------
Employee Id = 121    Employee Name = Arjun
Employee Id = 122    Employee Name = Ammu
Employee Id = 123    Employee Name = Ravi
Employee Id = 124    Employee Name = Priya
Employee Id = 125    Employee Name = Riya
After removing Employee object at 2nd position
------------------------------------
Employee Id = 121    Employee Name = Arjun
Employee Id = 123    Employee Name = Ravi
Employee Id = 124    Employee Name = Priya
Employee Id = 125    Employee Name = Riya
```

35. Create a HashMap type and display the elements using the keyset ()

```java
//35.Create a HashMap type and display the elements using the keyset ()

package Milestone1;

import java.util.HashMap;

public class HashMapKey {
    public static void main(String[] args) {
        // Creating an empty HashMap
        HashMap<Integer, String> hash_map = new HashMap<Integer, String>();
        // Mapping string values to int keys
        hash_map.put(10, "Hello");
        hash_map.put(15, "4");
        hash_map.put(20, "java");
        hash_map.put(25, "Welcomes");
        hash_map.put(30, "You");
        // Displaying the HashMap
        System.out.println("Initial Mappings are: " + hash_map);
        // Using keySet() to get the set view of keys
        System.out.println("The set is: " + hash_map.keySet());
    }
}
```

Console output:

```
<terminated> HashMapKey [Java Application] C:\Program Files\Java\jdk-17.0.1\bin\javaw.exe  (Feb 4, 2022, 4:11:57 PM – 4:11:58 PM)
Initial Mappings are: {20=java, 25=Welcomes, 10=Hello, 30=You, 15=4}
The set is: [20, 25, 10, 30, 15]
```