

108. Write a program to reverse the array without using temporary variable.

```
Ans. import java.io.*;
import java.util.*;
class ReverseArray
{
public static void main(String args[]) throws IOException
{
int a[ ] = new int[10];
int i=0, j=0;
Scanner sc = new Scanner(System.in);
System.out.println("Enter elements of array =");
for(i=0; i<10; i++)
{
a[i] = sc.nextInt();
}
System.out.println("Elements of the array are=");
for(i=0; i<10; i++)
{
System.out.print(" " + a[i]);
}
for(i=0, j=10-1; i < 10/2; i++, j--)
{
a[i] = a[i] + a[j];
a[j] = a[i] - a[j];
a[i] = a[i] - a[j];
}
System.out.print("\nReverse Array is=");
for(i=0; i<10; i++)
{
System.out.print(" " + a[i]);
}
}
}
```

109. Create a matrix of dimension 3×4 and display the elements in the form of rows and columns.

```
Ans. public class matrix1
{
public static void main(String args[])
{
int a[][] = {{1, 3, 4, 9}, {2, 4, 6, 7}, {3, 6, 8, 1}};
int i, j;
for(i = 0; i < 3; i++)
{
for(j = 0; j < 4; j++)
{
System.out.print(a[i][j] + " ");
}
System.out.println();
}
}
}
```

110. Accept a matrix of dimension 3×3 and print the sum of each row of the matrix.

Ans. public class matrix2

```
{
    public static void main(String args[])
    {
        int a[][] = {{3, 4, 9}, {4, 6, 7}, {6, 8, 1}};
        int i, j;
        int sum;
        for(i = 0; i < 3; i++)
        {
            sum = 0;
            for(j = 0; j < 3; j++)
            {
                System.out.print(a[i][j]+" ");
                sum += a[i][j];
            }
            System.out.print("=" +sum);
            System.out.println();
        }
    }
}
```

111. Accept a matrix of dimension 4×3 and print the sum of each column of the matrix.

Ans. public class matrix3

```
{
    public static void main(String args[])
    {
        int a[][] = {{3, 4, 9}, {4, 6, 7}, {6, 8, 1}, {1, 2, 3}};
        int i, j;
        int sum = 0;
        for(i = 0; i < 4; i++)
        {
            for(j = 0; j < 3; j++)
            {
                System.out.print(a[i][j]+" ");
            }
            System.out.println();
        }
        for(i = 0; i < 3; i++)
        {
            sum = 0;
            for(j = 0; j < 4; j++)
            {
                sum += a[j][i];
            }
            System.out.print(sum + """);
        }
    }
}
```

112. Create a matrix of dimension 4×4 and print the diagonal elements of the matrix.

Ans. public class matrix4

```
{
    public static void main(String args[])
    {
        int a[][] = {{3, 4, 9, 6}, {4, 6, 7, 2}, {6, 8, 1, 2}, {1, 2, 3, 5}};
        int i, j;
        int sum = 0;
        for(i = 0; i < 4; i++)
        {
            for(j = 0; j < 4; j++)
            {
                if(i == j || i + j == 3)
                    System.out.print(a[i][j] + "");
                else
                    System.out.print(" ");
            }
            System.out.println();
        }
    }
}
```

113. Create a matrix of dimension 3×3 and print the upper elements of the main diagonal.

Ans. public class matrix5

```
{
    public static void main(String args[])
    {
        int a[][] = {{4, 9, 6}, {6, 7, 2}, {8, 1, 2}};
        int i, j;
        for(i = 0; i < 3; i++)
        {
            for(j = 0; j < 3; j++)
            {
                if(i < j)
                    System.out.print(a[i][j] + " ");
            }
        }
    }
}
```

114. Create a java program to create an array of size 3×3 and display the sum of its diagonal elements.

Ans. public class matrix6

```
{
    public static void main(String args[])
    {
        int a[][] = {{4, 9, 6}, {6, 7, 2}, {8, 1, 2}};
        int i, j;
        int s1 = 0, s2 = 0;
        for(i = 0; i < 3; i++)
        {
            for(j = 0; j < 3; j++)
```

```

    {
        if(i == j)
            s1 += a[i][j];
        if(i + j == 2)
            s2 += a[i][j];
    }
}

System.out.println("sum of 1st diagonal = "+s1);
System.out.println("sum of 2nd diagonal = "+s2);
}
}

```

115. Write a java program to print the transpose of a matrix of dimension 3×2 .

Ans. public class matrix7

```

{
    public static void main(String args[])
    {
        int a[][] = {{9, 6}, {7, 2}, {1, 3}};
        int i, j;
        for(i = 0; i < 2; i++)
        {
            for(j = 0; j < 3; j++)
            {
                System.out.print(a[j][i]+" ");
            }
            System.out.println();
        }
    }
}

```

116. Write a program to search for an integer value input by the user in the sorted list given below using binary search technique. If found display "Search Successful" and print the element, otherwise display "Search Unsuccessful" [Board Question]

{31, 36, 45, 50, 60, 75, 86, 90}

Ans. import java.util.*;

```

class Search
{
    int A[]={31,36,45,50,60,75,86,90};
    int n,low,high,mid,flag=0;
    void display()
    {
        low=0;
        high=A.length-1;
        Scanner sc=new Scanner(System.in);
        System.out.println("Enter a no.");
        n=sc.nextInt();
        while(low<=high)
        {
            mid=(low+high)/2;
            if(n>A[mid])

```

```

    {
        low=mid+1;
    }
    else if(n<A[mid])
    {
        high=mid-1;
    }
    else
    {
        flag=1;
        break;
    }
}
if(flag==1)
{
    System.out.println("Search Successful"+n+"Found");
}
else
{
    System.out.println("Search Unsuccessful ");
}
}
}

```

117. Write a menu driven program to perform the following operations as per user's choice:

[Board Question]

- (i) To print the value of $c = a^2 + 2ab$, where a varies from 1.0 to 20.0 with increment of 2.0 and $b = 3.0$ is a constant.
- (ii) To display the following pattern using for loop:


```

A
AB
ABC
ABCD
ABCDE

```

Display proper message for an invalid choice.

```

Ans. import java.util.*;
class Menu
{
    int ch;
    double a,b=3.0,c;
    char i,j;
    void display()
    {
        Scanner sc=new Scanner(System.in);
        System.out.println("1. Value of c");
        System.out.println("2. Pattern");
        System.out.println("Enter Your Choice");
        ch=sc.nextInt();
        if(ch==1)

```

```
{
    for(a=1.0;a<=20.0;a=a+2)
    {
        c=a*a + 2*a*b;
        System.out.println(c);
    }
}
else if(ch==2)
{
    for(i='A';i<='E';i++)
    {
        for(j='A';j<=i;j++)
        {
            System.out.print(j);
        }
        System.out.println();
    }
}
else
{
    System.out.println("Wrong Choice");
}
}
```