

Q1. Explain 2D Array in java?

Ans: A 2d Array in java is an Array of Arrays. Which can be used to visualized data inform of matrix, table or grid. It is used to store data in form of table with rows and column

Syntax:

Data type [][]arrayName=new Data type[ROW SIZE][COLUMN SIZE];

Example:

```
int A[][]=new int[3][3];
```

	COLUMN 0	COLUMN 1	COLUMN 2
ROW 0	00(10)	01(20)	02(30)
ROW 1	10(40)	11(50)	12(60)
ROW 2	20(70)	21(80)	22(90)

Size of Array: ROW * COLUMN * SIZE OF DATA TYPE

3 * 3 * 4=36

How to initialize 2d Array in java

ArrayName[ROW INDEX][COLUMN INDEX]=value;

A[0][0]=10;

A[0][1]=20;

A[0][2]=30;

A[1][0]=40;

A[1][1]=50;

A[1][2]=60;

A[2][0]=70;

A[2][1]=80;

A[2][2]=90;

A2 - Notepad

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```
class A2{
    public static void main(String args[]){
        int A[][]=new int[3][3];
A[0][0]=10;
A[0][1]=20;
A[0][2]=30;

A[1][0]=40;
A[1][1]=50;
A[1][2]=60;

A[2][0]=70;
A[2][1]=80;
A[2][2]=90;

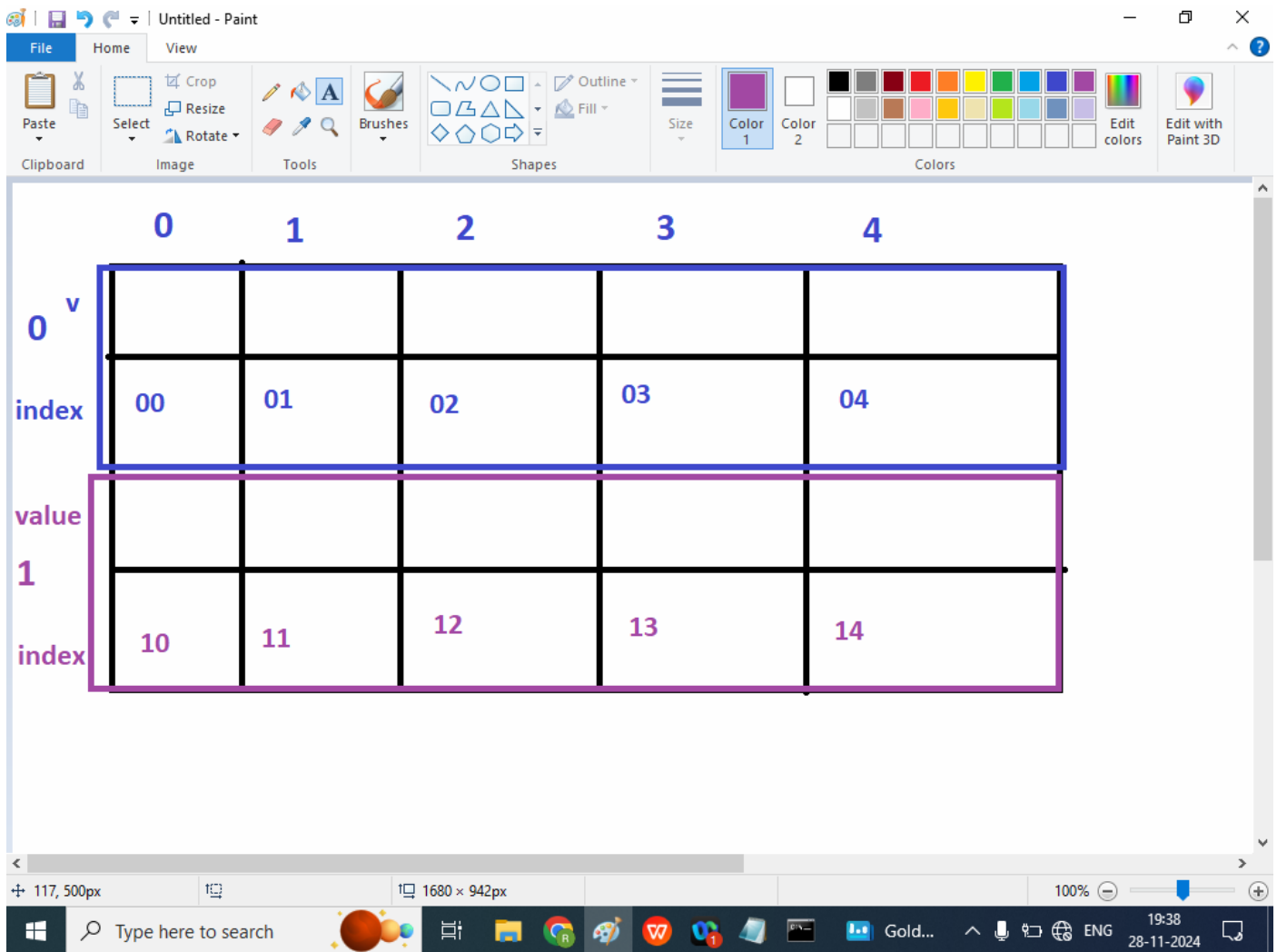
System.out.println(A[0][0]+"\\t"+A[0][1]+"\\t"+A[0][2]);
System.out.println(A[1][0]+"\\t"+A[1][1]+"\\t"+A[1][2]);
System.out.println(A[2][0]+"\\t"+A[2][1]+"\\t"+A[2][2]);
```

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Q3. Write a java program to take input 2d Array from the User and Print it on the Screen in Matrix Form



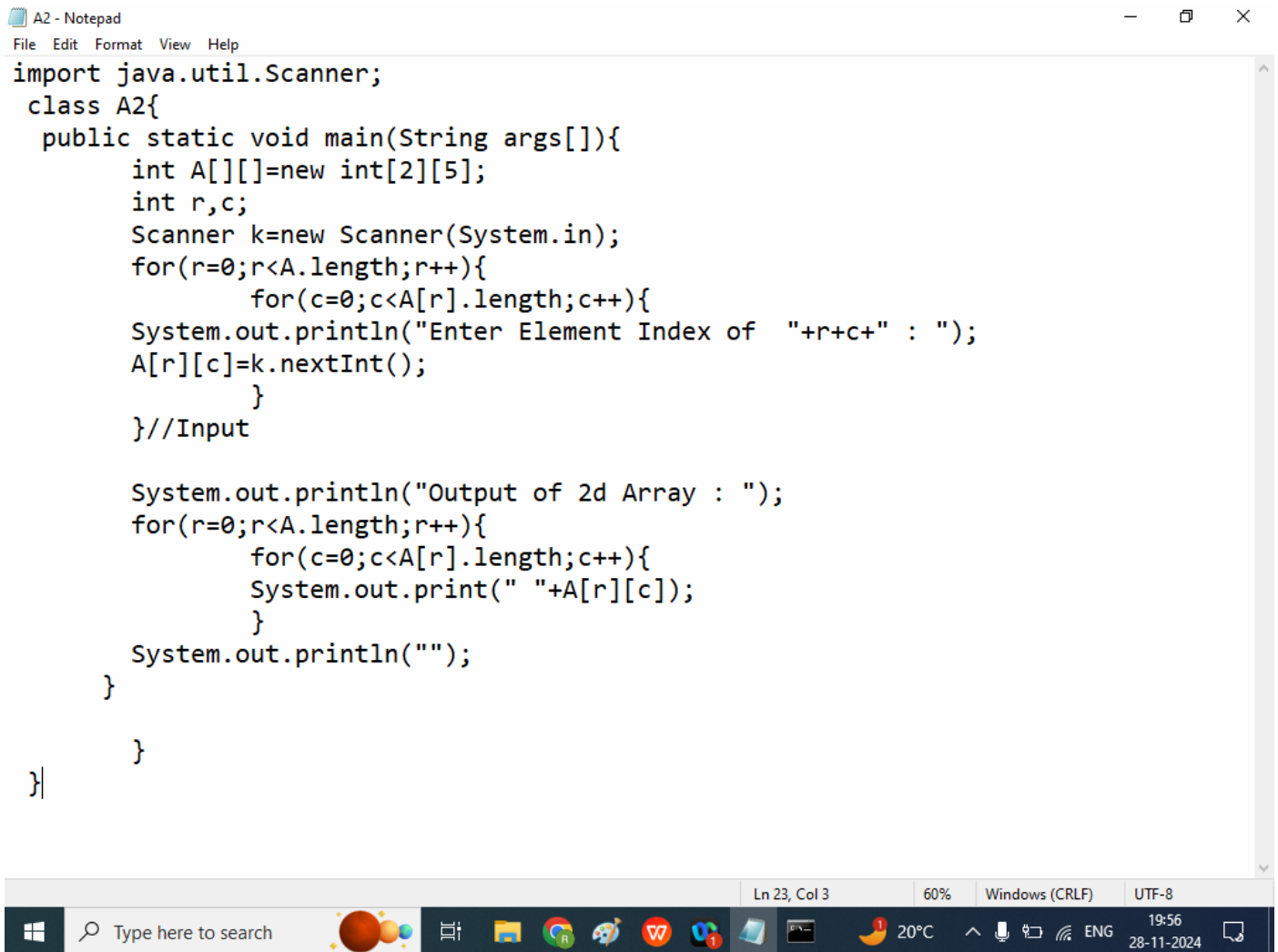
```
import java.util.Scanner;
class A2{
    public static void main(String args[]){
        int A[][]=new int[2][5];

        Scanner k=new Scanner(System.in);
        System.out.println("Enter Element Index 00 : ");
        A[0][0]=k.nextInt();
        System.out.println("Enter Element Index 01 : ");
        A[0][1]=k.nextInt();
        System.out.println("Enter Element Index 02 : ");
        A[0][2]=k.nextInt();
        System.out.println("Enter Element Index 03 : ");
        A[0][3]=k.nextInt();
        System.out.println("Enter Element Index 04 : ");
        A[0][4]=k.nextInt();

        System.out.println("Enter Element Index 10 : ");
        A[1][0]=k.nextInt();
        System.out.println("Enter Element Index 11 : ");
        A[1][1]=k.nextInt();
        System.out.println("Enter Element Index 12 : ");
        A[1][2]=k.nextInt();
        System.out.println("Enter Element Index 13 : ");
        A[1][3]=k.nextInt();
        System.out.println("Enter Element Index 14 : ");
        A[1][4]=k.nextInt();

        System.out.printf("\n %d %d %d %d %d ",A[0][0],A[0][1],A[0][2],A[0][3],A[0][4]);
        System.out.printf("\n %d %d %d %d %d ",A[1][0],A[1][1],A[1][2],A[1][3],A[1][4]);
    }
}
```

```
}  
}
```



```
A2 - Notepad  
File Edit Format View Help  
import java.util.Scanner;  
class A2{  
    public static void main(String args[]){  
        int A[][]=new int[2][5];  
        int r,c;  
        Scanner k=new Scanner(System.in);  
        for(r=0;r<A.length;r++){  
            for(c=0;c<A[r].length;c++){  
                System.out.println("Enter Element Index of "+r+c+" : ");  
                A[r][c]=k.nextInt();  
            }  
        }  
        System.out.println("Output of 2d Array : ");  
        for(r=0;r<A.length;r++){  
            for(c=0;c<A[r].length;c++){  
                System.out.print(" "+A[r][c]);  
            }  
            System.out.println("");  
        }  
    }  
}
```

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Example Jagged Array

```
class A2{  
    public static void main(String args[]){  
        int A[][]={  
            {1,2,3},  
            {1,2},  
            {1}  
        };  
  
        System.out.println(A[0][0]+"\\t"+A[0][1]+"\\t"+A[0][2]);  
        System.out.println(A[1][0]+"\\t"+A[1][1]);  
        System.out.println(A[2][0]);  
  
    }  
}
```

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