Object Oriented Programming with Java (OOPJ)

Session 5: Arrays

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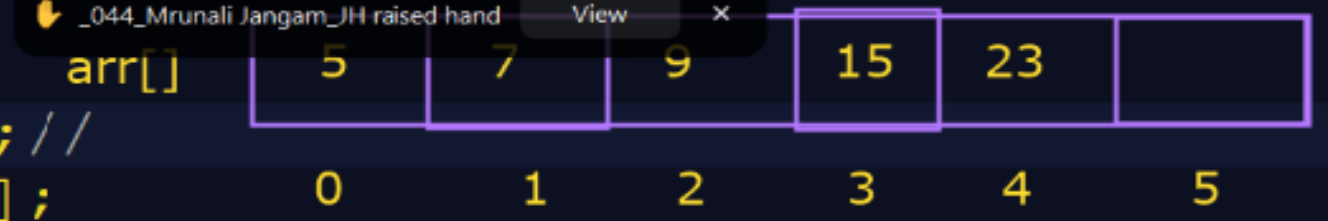
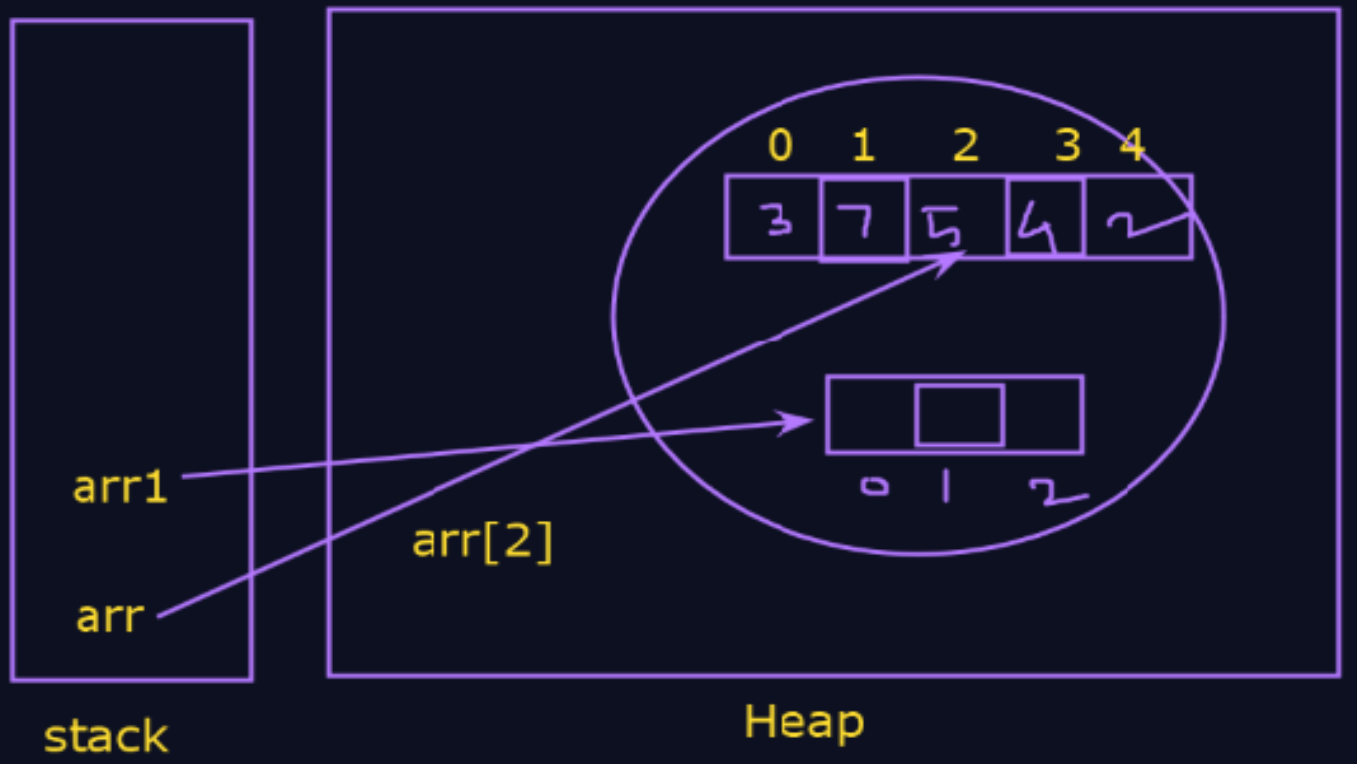
Ex:

```
int[] arr = new int[5];//
int[] arr1 = new int[3];
```





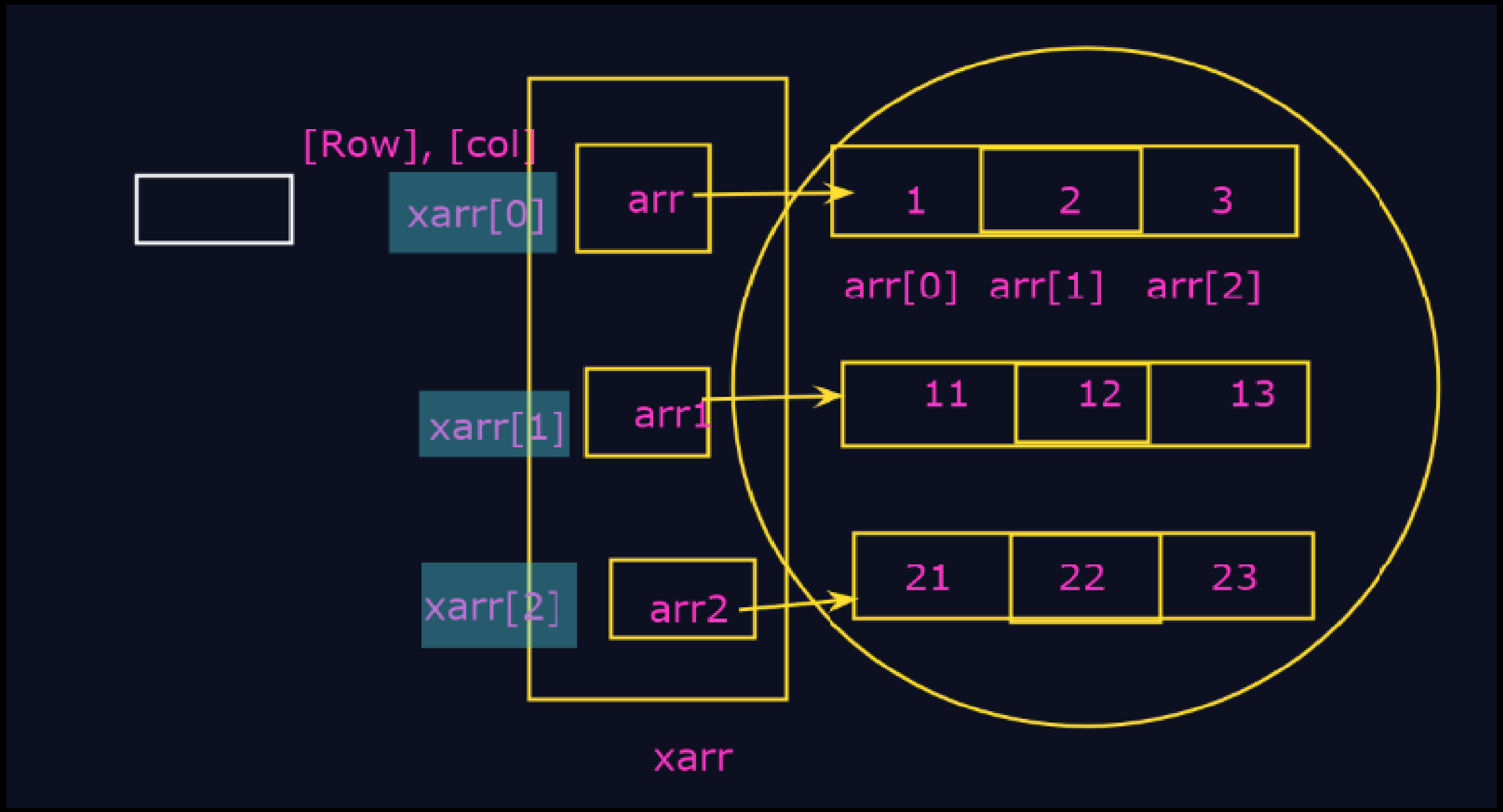

```
byte[] arr = new byte[5];
short[] arr = new short[5];
```

```java
class ArrayDemo2{

    public static void main(String args[]){
        Scanner sc = new Scanner(System.in);
        //length : Array
        //length() : String

        int arr[] = new int[5];
        //Input in the array
        for(int i=0;i<arr.length;i++)
        {
            System.out.println("Enter element:");
            arr[i] = sc.nextInt();
        }

        for(int i=0;i<arr.length;i++)
        {
            System.out.println(arr[i]);
```

```
C:\WINDOWS\system32
2
Enter element:
3
Enter element:
4
Enter element:
5
1
2
3
4
5

C:\Test>
```

```java
class ArrayDemo1{

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

        int arr[] = new int[5];
        //Input in the array
        for(int i=0;i<3;i++)
        {
            System.out.println("Enter element:");
            arr[i] = sc.nextInt();
        }

        for(int i=0;i<3;i++)
        {
            System.out.println(arr[i]);
        }
```

```
C:\WINDOWS\system32
C:\Test>javac ArrayDemo

C:\Test>java ArrayDemo1
Enter element:
4
Enter element:
7
Enter element:
9
4
7
9

C:\Test>
```


[Row], [col]
xarr[0]
xarr[1]
xarr[2]
arr
arr1
arr2
1
2
3
11
12
13
21
22
23
arr[0] arr[1] arr[2]
xarr

```java
        int arr1[][] = new int[2][];//Jagged array(rows without fixed columns)
        int arr2[][] = new int[2][3];//Fixed 2D array (2rows, 3cols)


        for(int ar[] : arr1){
            System.out.println(" "+ar);

        }

        System.out.println("++++++++++++++++++++");

        for(int ar[] : arr2){
            System.out.println(" "+ar);

        }

        System.out.println("++++++++++++++++++++");


    }
```

Jagged array

```
byte[] arr = new byte[5];//0
short[] arr = new short[5];//0
float[] arr = new float[5];//0.0
char[] arr = new char[4];//''/u0000'=null
```

```
For-each:
-Printing elemnets:
for(int x : arr){
    System.out.println(x);
}
```

2-D Array:Multidimensional array

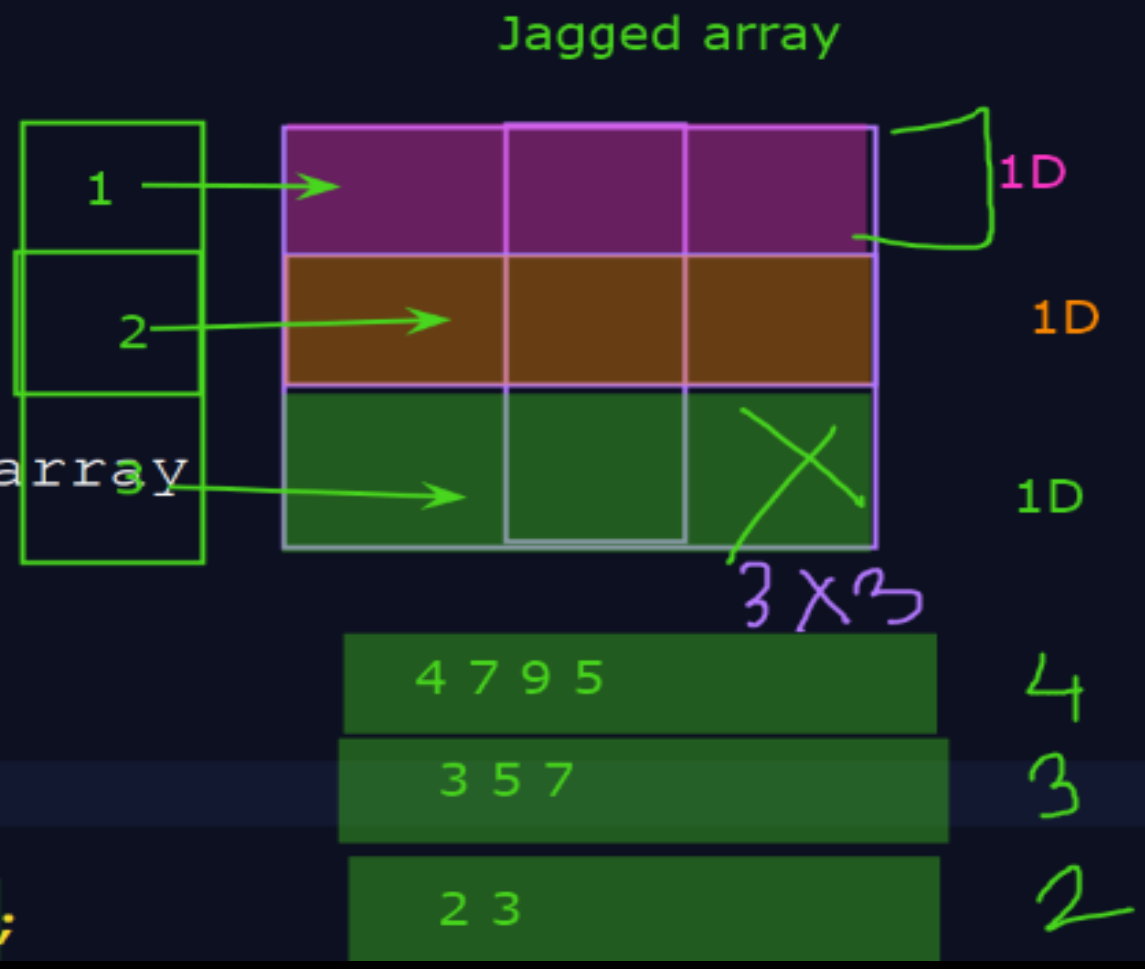
1.Create an 2D array:

```
int[][] a;
int [][]a;
int a[][];
```

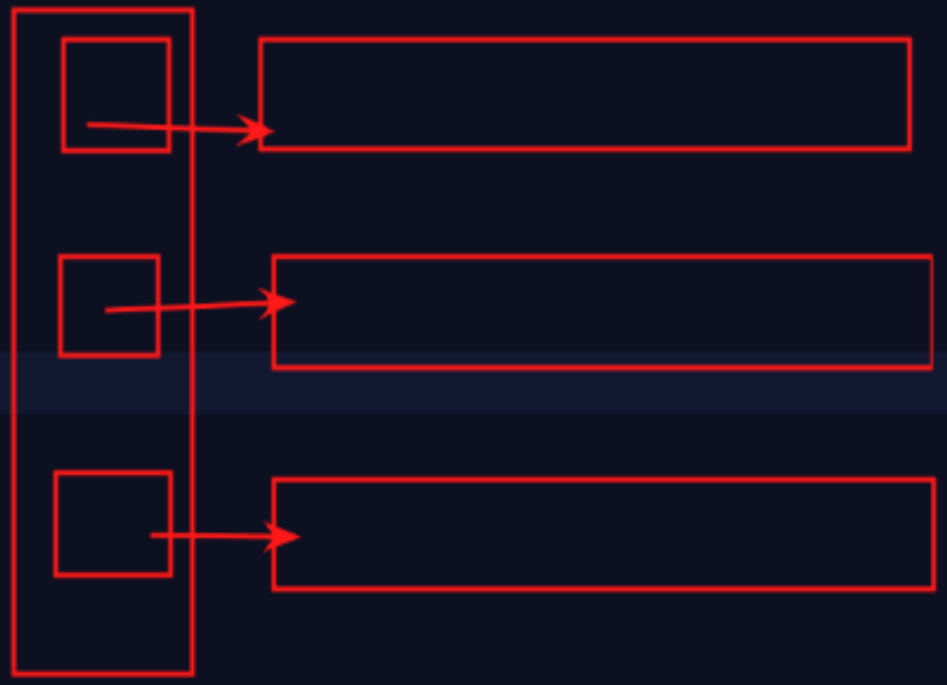
2.Declare 2D array:

```
int[][] a = new int[size][];
```

Row,col



```java
    /*for(int i=1;i<=2 ;i++){
        for(int j=1;j<=2;j++){
        System.out.print(arr[i][j]+" ");
        }
        System.out.println();
    }*/

    for(int ar[] : arr){
        for(int a : ar){
            System.out.print(" "+a);
        }
        System.out.println();
    }


}
```

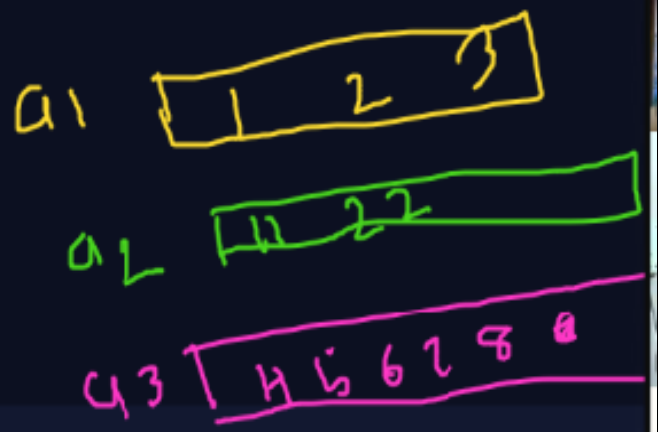



```java
import java.util.*;
class ArrayDemo1{

    public static void main(String args[]){
        Scanner sc = new Scanner(System.in);
        int arr[][ = new int[5];
        for(int i=0;i<3;i++){
        {
            System.out.println("Enter element:");
            arr[i][j] = sc.nextInt();

        }
        //for-each: print the array elements
        for(int x : arr){
            System.out.println(x);
        }

        /*for(int i=0;i<arr.length ;i++){
            System.out.println(arr[i]);

        }*/
```

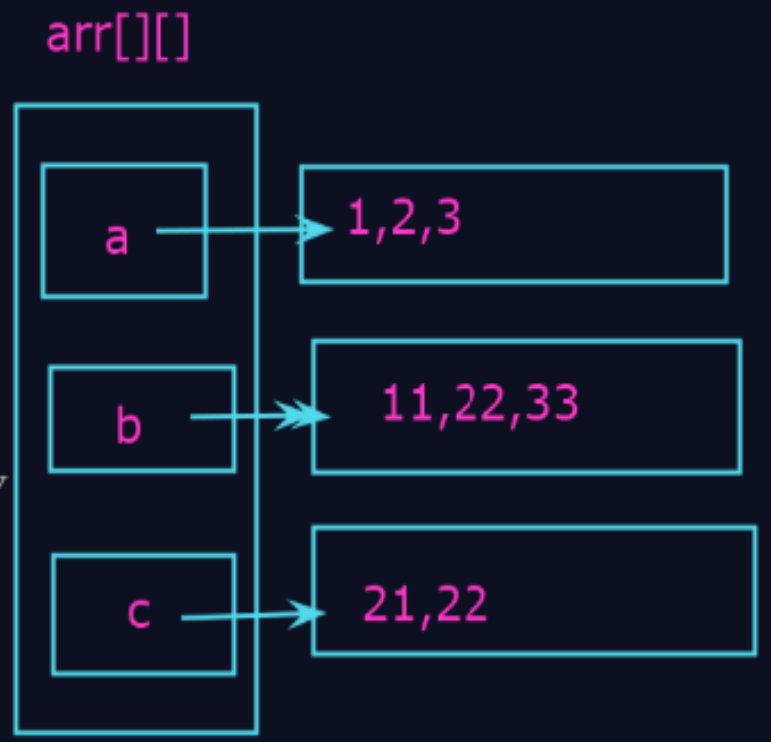
```java
public static void main(String args[]){
    int a[] = {1,2,3};
    int b[] = {11,12,13};
    int c[] = {21,22,23};

    int arr[][] = new int[3][];
    arr[0]=a;
    arr[1]=b;
    arr[2]=c;

    for(int ar[] : arr)
    {
        for(int x : ar)
        {
            System.out.print(" "+x);
        }
        System.out.println();
    }
}
```

```
C:\WINDOWS\system32

C:\Test>java ArrayDemo5
 1 2 3
 11 12 13
 21 22 23

C:\Test>javac ArrayDemo6.java

C:\Test>java ArrayDemo6
 1 2 3
 11 12 13
 21 22 23

C:\Test>
```

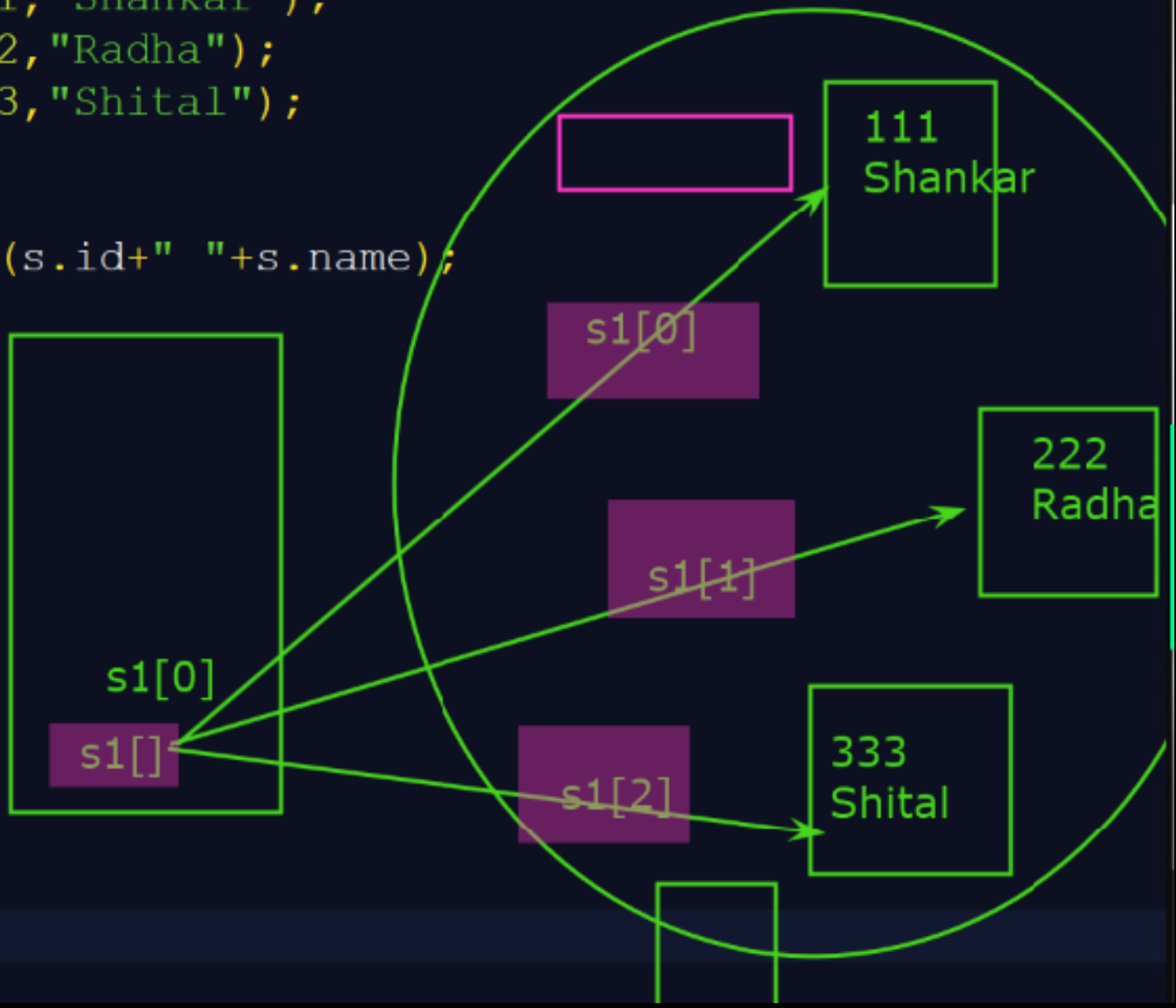
```java
public static void main(String args[]){
    Scanner sc = new Scanner(System.in);
    System.out.println("Enter no. of rows:");
    int r = sc.nextInt();

    int arr[][] = new int[r][];//Jagged array(rows without fixed columns)

    //Input:
    for(int i=0;i<arr.length;i++){
        System.out.println("Enter no. of cols:"+ i + ":");
        int cols = sc.nextInt();
        arr[i] = new int[cols];

        for(int j=0;j<arr[i].length;j++){
        System.out.println("Enter elem:");
        arr[i][j] = sc.nextInt();
        }
    }

    //Print array
    for(int ar[] : arr){
```

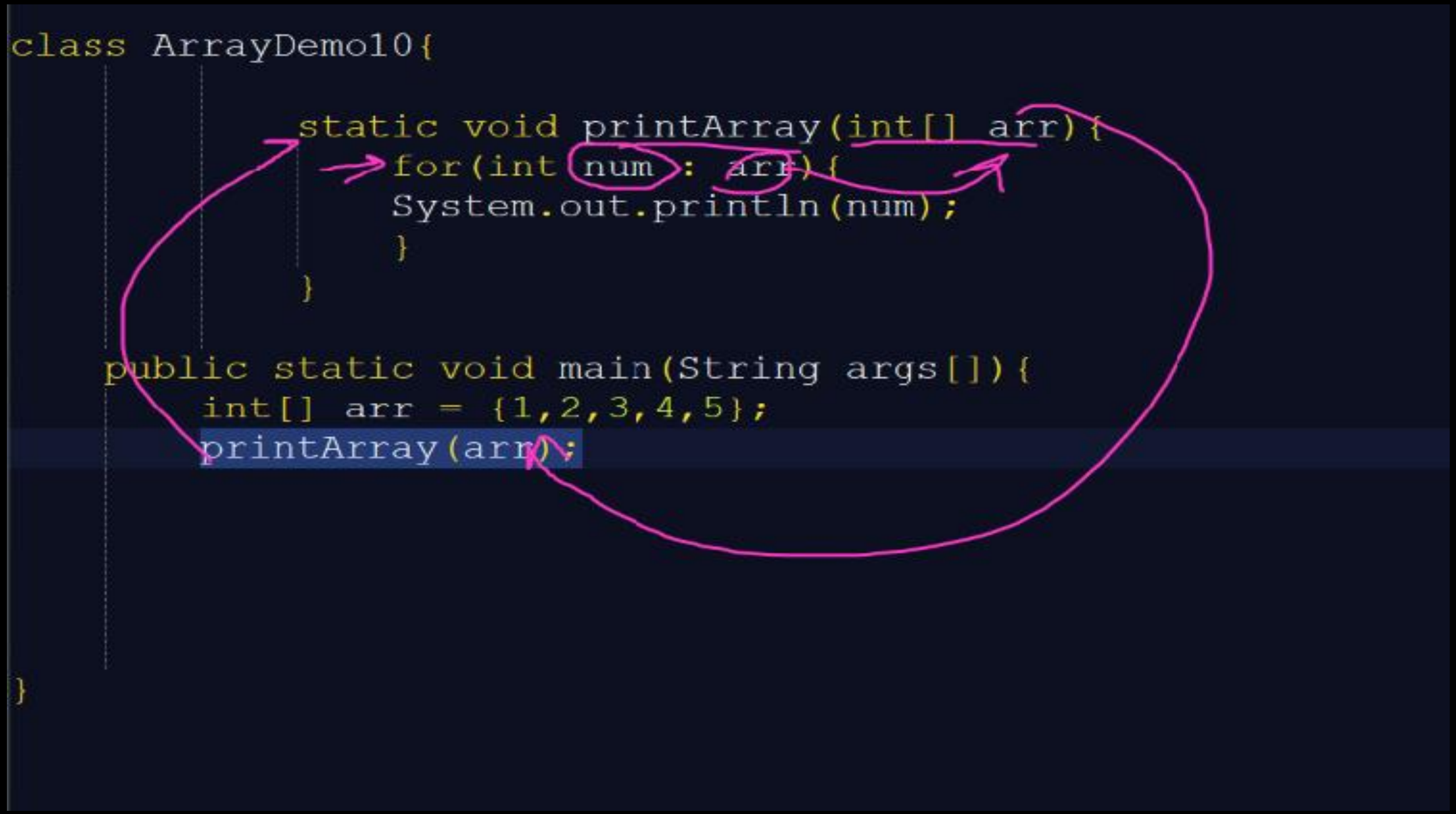


```java
import java.util.*;
class ArrayDemo6
{

    public static void main(String args[]){

        int a[] = {1,2,3,}; //First array
        int b[] = {11,12,13};//Second array
        int c[] = {21,22}; //Third array

        int arr[][] = new int[3][];//Jagged array
        arr[0] = a;//Assigning first array
        arr[1] = b;//Assigning second array
        arr[2] = c;//Assigning third array


    }
}
```



```
        Student[] s1 = new Student[3]; //Array of objects
        s1[0] = new Student(111,"Shankar");
        s1[1] = new Student(222,"Radha");
        s1[2] = new Student(333,"Shital");

        for(Student s : s1){
            System.out.println(s.id+" "+s.name);
        }

    }

}
```




class ArrayDemo10{
static void printArray(int[] arr){
for(int num : arr){
System.out.println(num);
}
}
public static void main(String args[]){
int[] arr = {1,2,3,4,5};
printArray(arr);
}

```java
class ArrayDemo10{

    static void printArray(int[] arr){
        //Printing of array element
        for(int num : arr){
        System.out.println(num);
        }
    }

    public static void main(String args[]){
        //Declared the array
        int[] arr = {1,2,3,4,5};

        printArray(arr);//Called function: passing array reference

    }

}
```

```
class Employee{
    int i;
    String name;

    Employee(){
        this.i = 100;
        this.name="unknown";
    }

    Employee(int i,String name){
        this.i = i;
        this.name=name;
    }

    void data(String name,int i)
    {
        this.i = i;
        this.name=name

    }
```

Emplyee e1 = new Employee();

i
name

Employee e1 = new Employee(555 'Abc')

e1.data("dfdrf",222);