Data Structures

Exercise Solutions(lab 1)
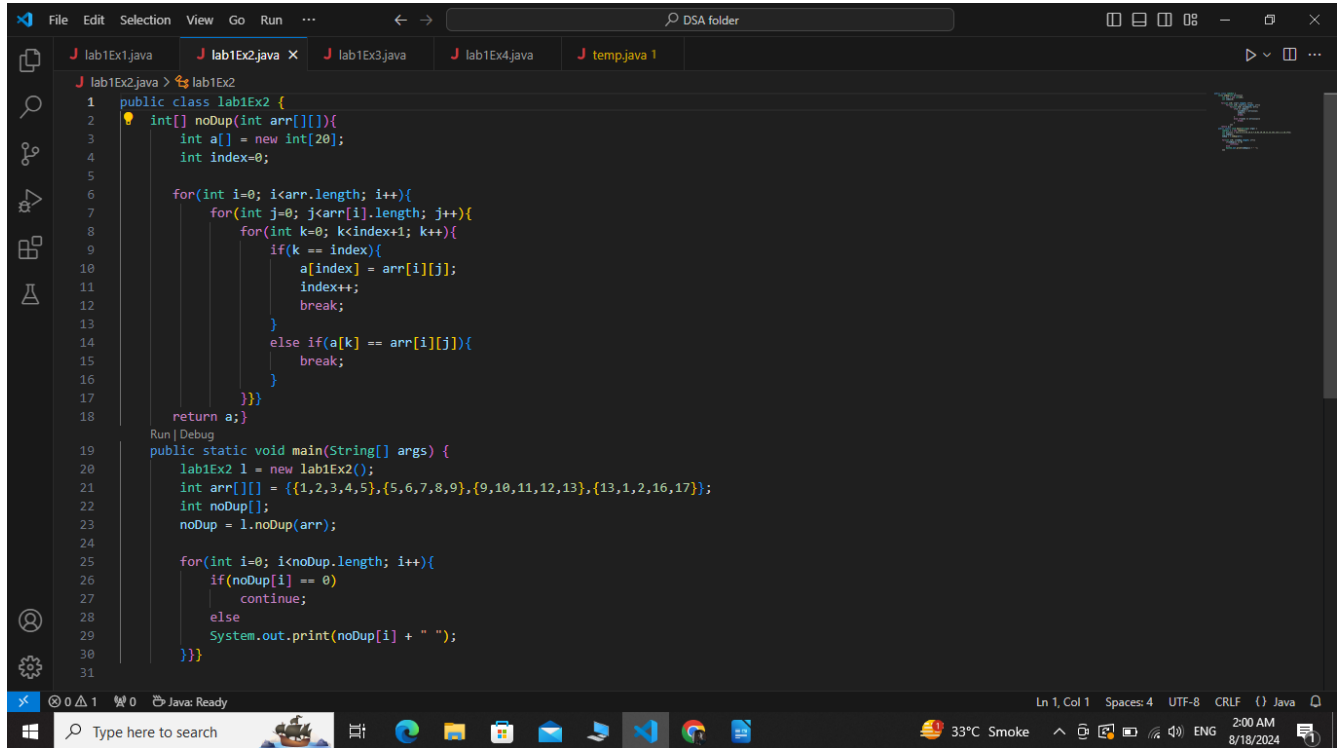
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B-S CS III Section A
023-23-0350

Task #1
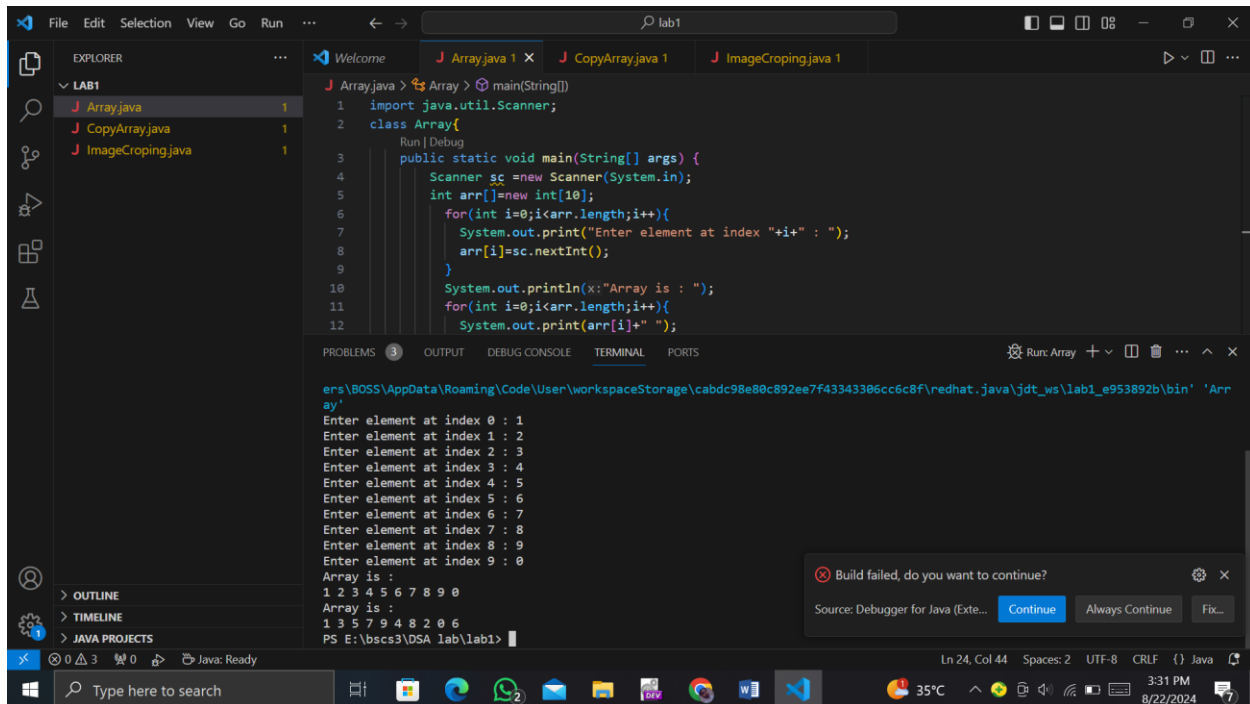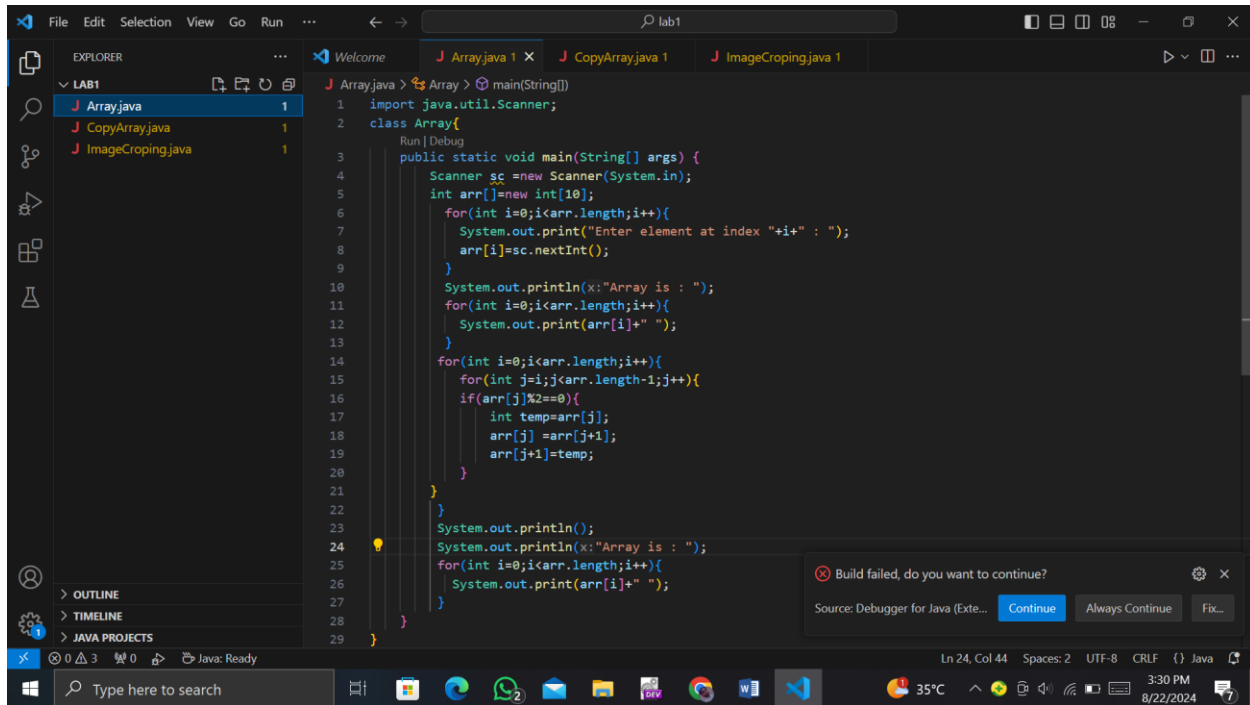
Task #2


```java
public class lab1Ex2 {
    int[] noDup(int arr[][]){
        int a[] = new int[20];
        int index=0;

        for(int i=0; i<arr.length; i++){
            for(int j=0; j<arr[i].length; j++){
                for(int k=0; k<index+1; k++){
                    if(k == index){
                        a[index] = arr[i][j];
                        index++;
                        break;
                    }
                    else if(a[k] == arr[i][j]){
                        break;
                    }
                }}}
        return a;}
    public static void main(String[] args) {
        lab1Ex2 l = new lab1Ex2();
        int arr[][] = {{1,2,3,4,5},{5,6,7,8,9},{9,10,11,12,13},{13,1,2,16,17}};
        int noDup[];
        noDup = l.noDup(arr);

        for(int i=0; i<noDup.length; i++){
            if(noDup[i] == 0)
                continue;
            else
            System.out.print(noDup[i] + " ");
        }}}
```
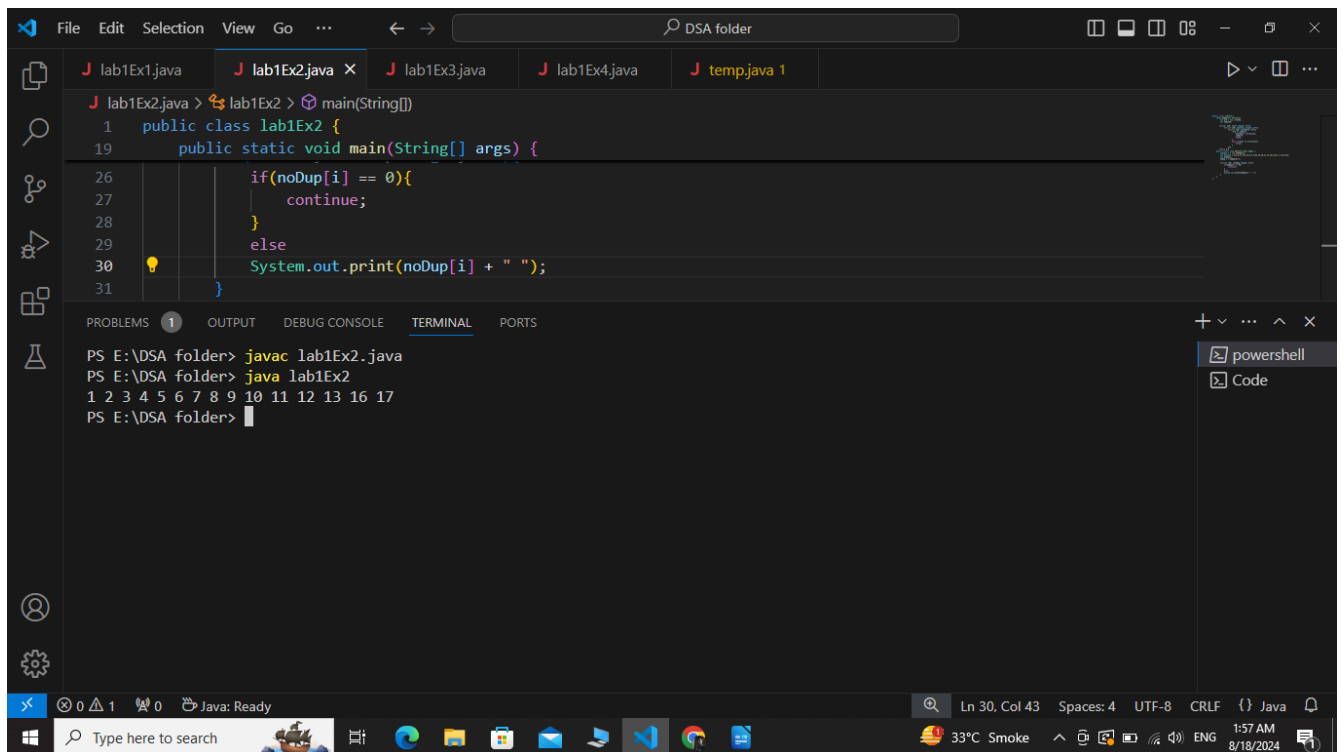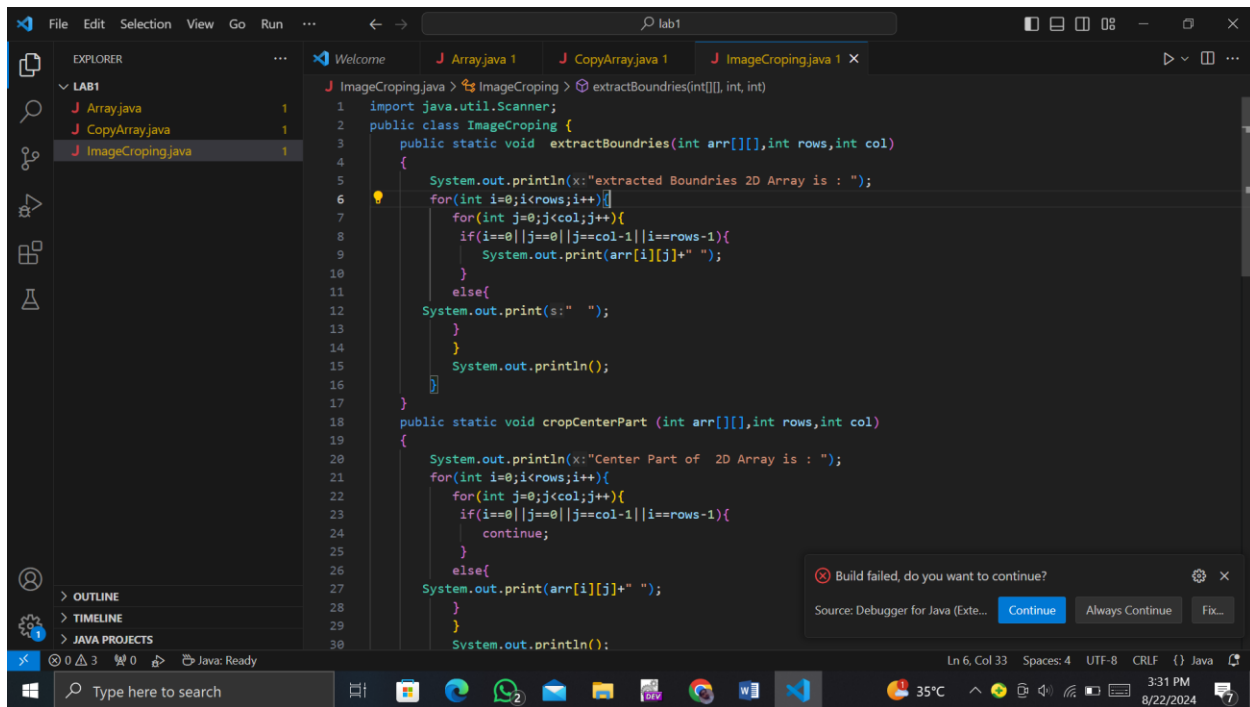


```java
public class lab1Ex2 {
    public static void main(String[] args) {

                if(noDup[i] == 0){
                    continue;
                }
                else
                System.out.print(noDup[i] + " ");
        }
```
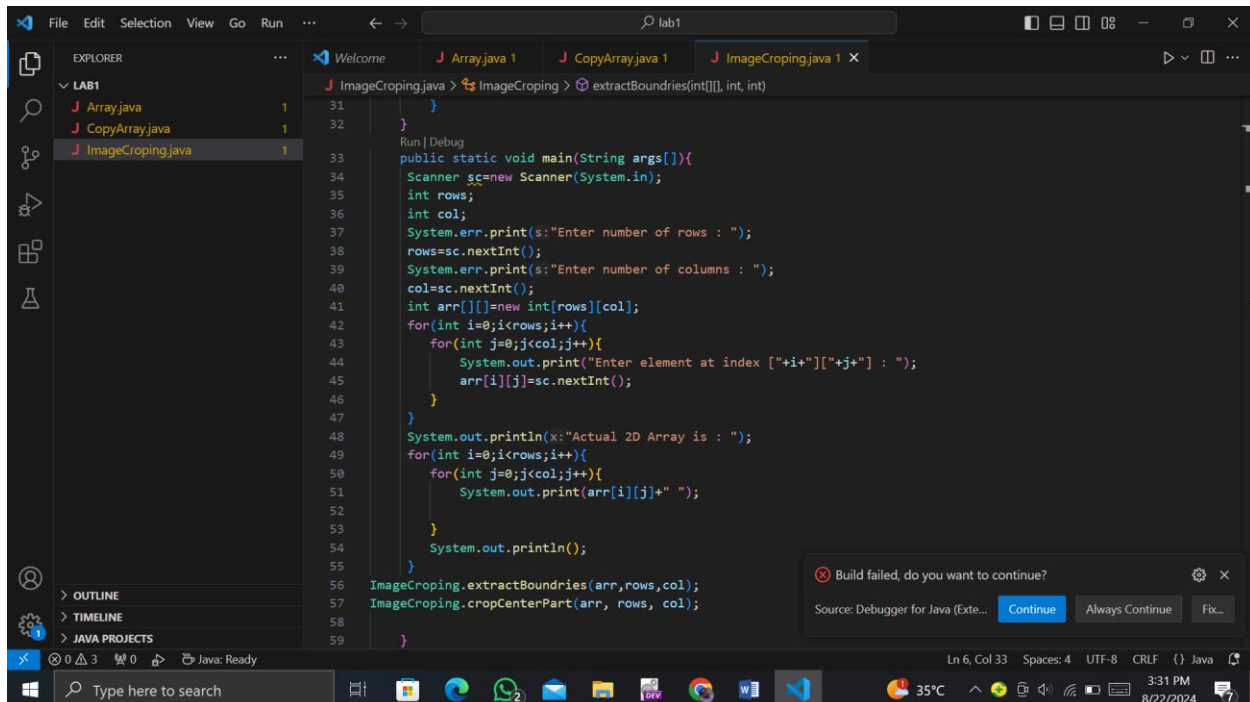
```
PS E:\DSA folder> javac lab1Ex2.java
PS E:\DSA folder> java lab1Ex2
1 2 3 4 5 6 7 8 9 10 11 12 13 16 17
PS E:\DSA folder>
```
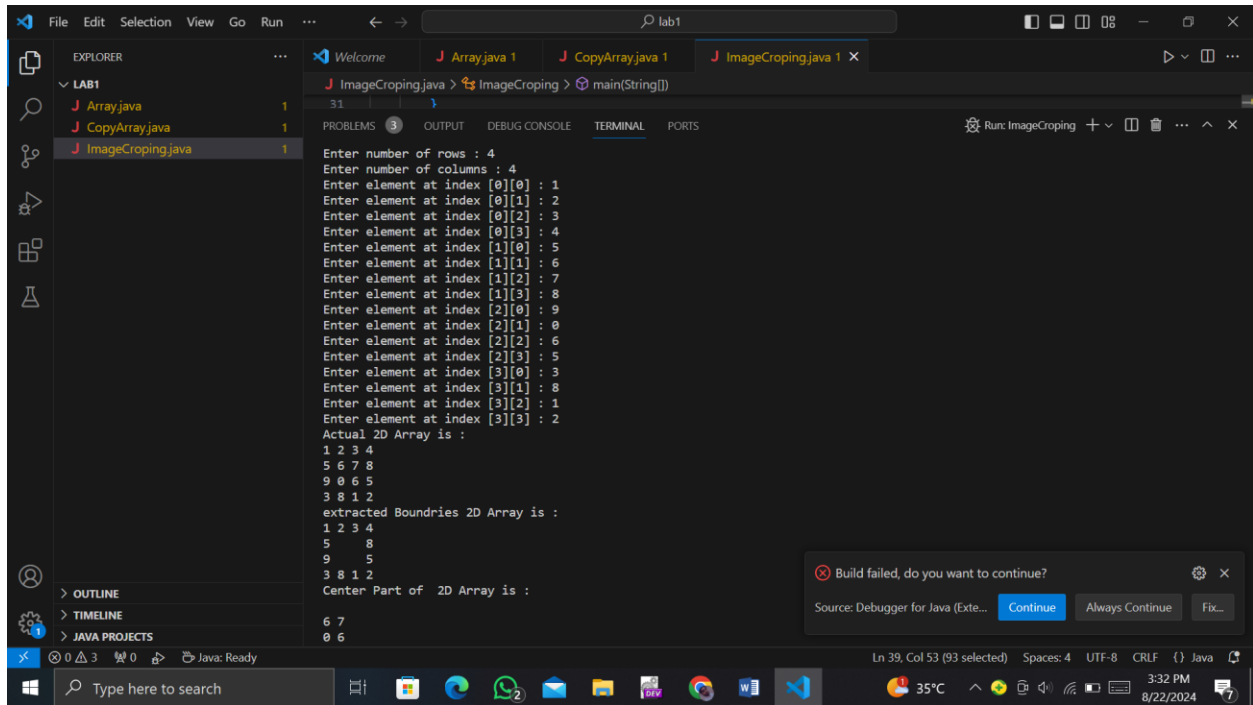
Task #4


```java
import java.util.Scanner;
public class ImageCroping {
    public static void extractBoundries(int arr[][],int rows,int col)
    {
        System.out.println(x:"extracted Boundries 2D Array is : ");
        for(int i=0;i<rows;i++){
            for(int j=0;j<col;j++){
                if(i==0||j==0||j==col-1||i==rows-1){
                    System.out.print(arr[i][j]+" ");
                }
                else{
            System.out.print(s:"   ");
                }
            }
            System.out.println();
        }
    }
    public static void cropCenterPart (int arr[][],int rows,int col)
    {
        System.out.println(x:"Center Part of  2D Array is : ");
        for(int i=0;i<rows;i++){
            for(int j=0;j<col;j++){
                if(i==0||j==0||j==col-1||i==rows-1){
                    continue;
                }
                else{
            System.out.print(arr[i][j]+" ");
                }
            }
            System.out.println();
```



```java
        }
    }
    public static void main(String args[]){
        Scanner sc=new Scanner(System.in);
        int rows;
        int col;
        System.err.print(s:"Enter number of rows : ");
        rows=sc.nextInt();
        System.err.print(s:"Enter number of columns : ");
        col=sc.nextInt();
        int arr[][]=new int[rows][col];
        for(int i=0;i<rows;i++){
            for(int j=0;j<col;j++){
                System.out.print("Enter element at index ["+i+"]["+j+"] : ");
                arr[i][j]=sc.nextInt();
            }
        }
        System.out.println(x:"Actual 2D Array is : ");
        for(int i=0;i<rows;i++){
            for(int j=0;j<col;j++){
                System.out.print(arr[i][j]+" ");
            }

            System.out.println();
        }
        ImageCroping.extractBoundries(arr,rows,col);
        ImageCroping.cropCenterPart(arr, rows, col);

    }
```

THE END