

Ques

Merge two Sorted Arrays

$O(n+m)$

$A = [1, 5, 8, 11]$

$B = [2, 3, 6, 12]$

$ans = [1, 2, 3, 5, 6, 8, 11, 12]$

repetitive

```
public static ArrayList<Integer> merger(int[] arr1, int[] arr2){
```

```
    int i=0;
```

```
    int j=0;
```

```
    ArrayList<Integer> ans = new ArrayList<>();
```

```
    while(i<arr1.length && j<arr2.length){
```

```
        if(arr1[i]<arr2[j]){
```

```
            ans.add(arr1[i]);
```

```
            i++;
```

```
        }else{
```

```
            ans.add(arr2[j]);
```

```
            j++;
```

```
        }
```

```
    while(i< arr1.length){
```

```
        ans.add(arr1[i]);
```

```
        i++;
```

```
    while(j< arr2.length){
```

```
        ans.add(arr2[j]);
```

```
        j++;
```

```
    ArrayList<Integer> unique = new ArrayList<>();
```

```
    for(int k=0;k<ans.size();k++){
```

```
        if(!unique.contains(ans.get(k))){
```

```
            unique.add(ans.get(k));
```

```
        }
```

```
    }
```

```
    return unique;
```

$arr1: [1, 5, 6, 8, 11, 13]$

$arr2: [5, 5, 9]$

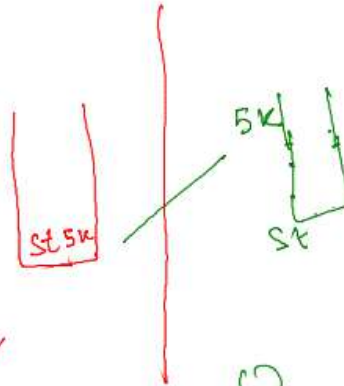
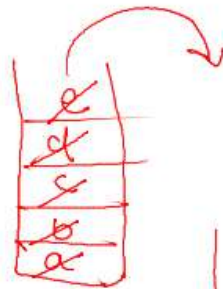
$ans = [1, 5, 5, 5, 6, 8, 9, 11, 13]$

unique  $= [1, 5, 6, 8, 9, 11, 13]$

Stack

LIFO/FILO

a  
b  
c  
d  
e



Stack<Integer> st = new Stack();

st.push(1);  
st.push(2);  
st.push(3);

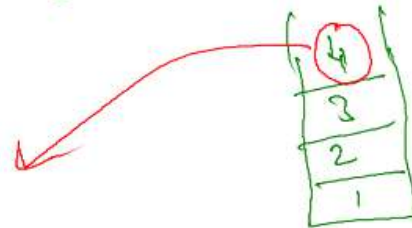
st.pop();  
st.pop();  
st.push(4);

st.pop();  
st.pop();  
st.pop();

st.size();

(st.peek())  
→ 4

st.isEmpty()



n=10

07

```

public static void main(String[] args) {
    Scanner scn = new Scanner(System.in);
    int n = scn.nextInt();
    Stack<Integer> st = new Stack<>();

    for(int i=0; i<n; i++){
        int val = scn.nextInt();

        if(val == 1){
            System.out.println(st.size());
        } else if(val == 2){
            if(st.size() > 0){
                st.pop();
            } else{
                System.out.println("-1");
            }
        } else if(val == 3){
            int x = scn.nextInt();
            st.push(x);
        } else{
            if(st.size() > 0){
                System.out.println(st.peek());
            } else{
                System.out.println("-1");
            }
        }
    }
}
/* Enter your code here. Read input from STDIN. Print output
*/

```

10 ✓  
 3 1  
 3 2  
 4 ✓  
 4 ✓  
 2 ✓  
 4 ✓  
 3 4 ✓  
 2 ✓  
 4 ✓  
 1 ✓

val = 8

0/p = 2  
 2  
 1  
 1  
 1



- pop()
- push()
- peek()
- size()
- isEmpty()

Ques

String str = "abcdefg"  
return "fedcba"



while (st.size() > 0)  
 System.out.print(st.pop());

fedcba

```
public static void main(String[] args) {  
    Scanner scn = new Scanner(System.in);  
    String str = scn.nextLine();  
  
    Stack<Character> st = new Stack<>();  
  
    int i = 0;  
    while (i < str.length()) {  
        st.push(str.charAt(i));  
        i++;  
    }  
  
    while (st.size() > 0) {  
        System.out.print(st.pop());  
    }  
    /* Enter your code here. Read input from STDIN. Print output
```

```

ArrayList<Integer> arr;

public Solution(){
    arr = new ArrayList<>();
}

public void push(int x){
    arr.add(x);
}

public void pop(){
    if(arr.size()>0){
        arr.remove(stack.size()-1);
    }
}

public void size(){
    System.out.println(arr.size());
}

public void display(){
    for(int i=0;i<arr.size();i++){
        System.out.print(arr.get(i)+" ");
    }
    System.out.println();
}

```

```

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

    int n = scn.nextInt();
    Solution stack = new Solution();
    int i =1;
    while(i<=n){
        String str = scn.next();
        if(str.equals("push")){
            int x = Integer.parseInt(scn.next());
            stack.push(x);
        }else if(str.equals("pop")){
            stack.pop();
        }else if(str.equals("display")){
            stack.display();
        }else{
            stack.size();
        }

        i++;
    }
    /* Enter your code here. Read input from STDIN. Print output to
}

```