Aim:

Amit wants to develop a program to remove an element from a list of integers based on its index. Write a Java program using ArrayList to help Amit implement this functionality.

Input Format:

The first line is a list of integers separated by space. The user will enter any non-numeric character to indicate the end of the input.
The second line is the index of the element to remove.

Output Format:

The program should display the list after removing the specified indexed element.
If the index is out of bounds, print **"Index out of range"**.

Source Code:

q29124/ElementRemovalByIndex.java

```java
package q29124;
import java.util.ArrayList;
import java.util.Scanner;

public class ElementRemovalByIndex {
    public static void main(String[] args) {
        Scanner scanner = new Scanner(System.in);
        // Input the list of integers
        ArrayList<Integer> numbers = new ArrayList<>();

        // write the code..
        while(scanner.hasNextInt()){
            int num = scanner.nextInt();
            numbers.add(num);
        }
        scanner.nextLine();

        int index = scanner.nextInt();


        if(index < 0 || index >= numbers.size()){
            System.out.println("Index out of range");
        }else{
            numbers.remove(index);
            System.out.println(numbers);

            scanner.close();
        }
    }
}
```

Execution Results - All test cases have succeeded!

Test Case - 1

User Output
1 2 3 4 5 6 7 e
3
[1, 2, 3, 5, 6, 7]

Test Case - 2
User Output
100 200 300 400 500 $
100
Index out of range

Test Case - 3
User Output
3 4 2 1 3 4 2 3 4 2 5 6 s
5
[3, 4, 2, 1, 3, 2, 3, 4, 2, 5, 6]

Test Case - 4
User Output
23 27 91 73 79 0 !
9
Index out of range