

Java Coding Assessment (java_101 solution)

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Question-1) Java ArrayList

Solution : -

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

public class java_101_Question1 {

    public static void main(String[] args) {

        Scanner sc = new Scanner(System.in);

        int n = sc.nextInt();

        ArrayList<ArrayList<Integer> > arr =
        new ArrayList<ArrayList<Integer> >(n);

        for(int i=0;i<n;i++) {
            int num = sc.nextInt();
```

```

        ArrayList<Integer> list = new ArrayList<Integer>();

        for(int k=0;k<num;k++) {
            list.add(sc.nextInt());
        }
        arr.add(list);
    }

    int queries = sc.nextInt();
    for(int i=0;i<queries;i++) {

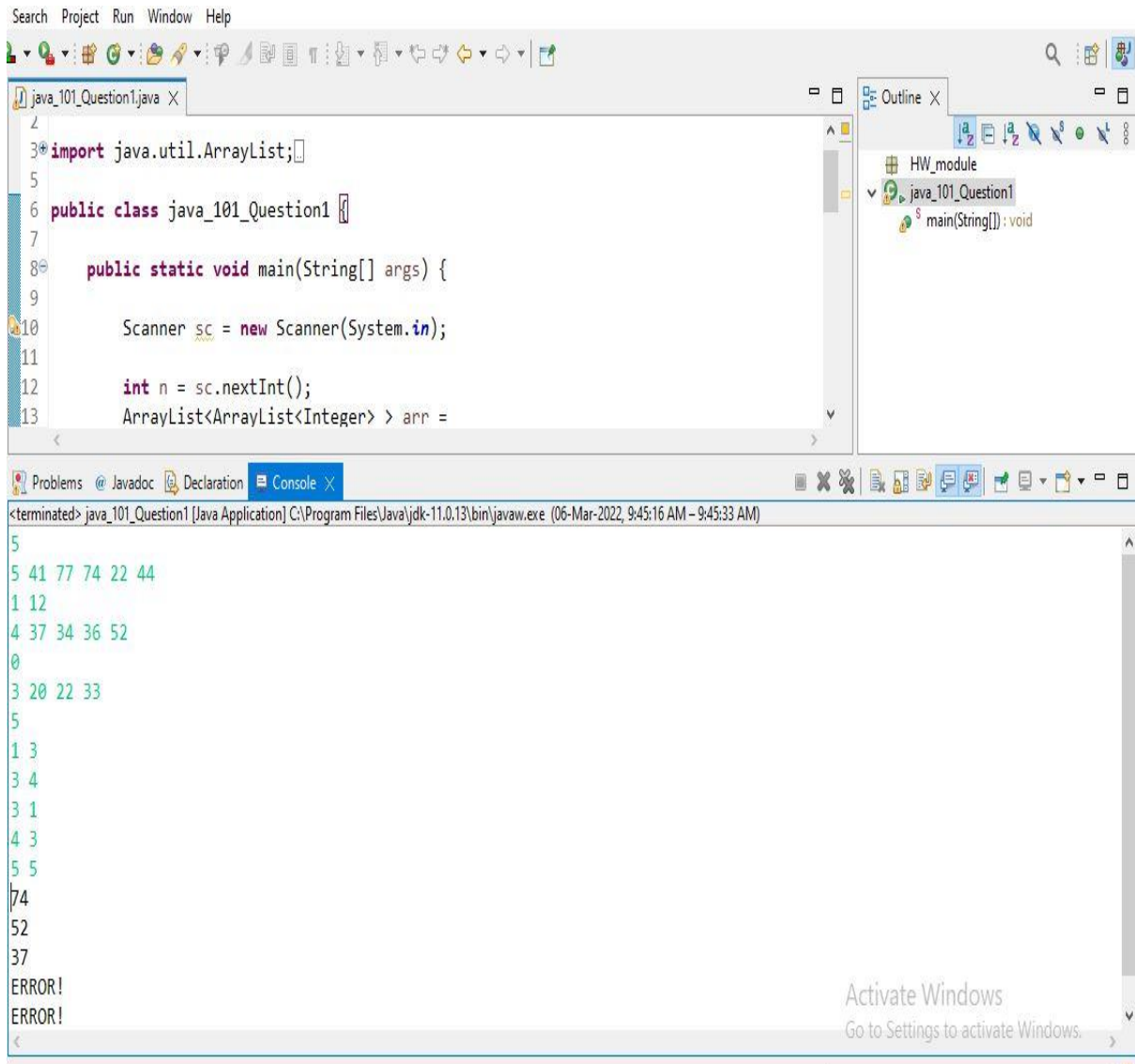
        int x = sc.nextInt()-1;
        int y = sc.nextInt()-1;

        if(y>(arr.get(x).size()) - 1) {
            System.out.println("ERROR!");
        }

        else {
            System.out.println(arr.get(x).get(y));
        }
    }
}

```

Output : -



The screenshot displays an IDE window with a Java file named `java_101_Question1.java`. The code defines a `main` method that uses a `Scanner` to read integers from the command line and stores them in an `ArrayList`. The IDE's `Outline` pane on the right shows the project structure, including the `main` method. The `Console` pane at the bottom shows the output of the program, which consists of several lines of numbers. The output is as follows:

```
<terminated> java_101_Question1 [Java Application] C:\Program Files\Java\jdk-11.0.13\bin\javaw.exe (06-Mar-2022, 9:45:16 AM - 9:45:33 AM)
5
5 41 77 74 22 44
1 12
4 37 34 36 52
0
3 20 22 33
5
1 3
3 4
3 1
4 3
5 5
74
52
37
ERROR!
ERROR!
```

An "Activate Windows" watermark is visible in the bottom right corner of the console area.

Question-2) Java List

Solution : -

```
import java.util.ArrayList;
import java.util.Iterator;
import java.util.List;
import java.util.Scanner;

public class Java_101_Question2 {

    public static void main(String[] args) {
        List<Integer> list = new ArrayList<>();

        Scanner sc = new Scanner(System.in);

        int n = sc.nextInt();

        for(int i=0;i<n;i++) {
            list.add(sc.nextInt());
        }

        int queries = sc.nextInt();
        for(int i=1;i<=queries;i++) {

            String command = sc.next();
```

```

        if(command.equals("Insert")) {
            int position = sc.nextInt();
            int element = sc.nextInt();
            list.add(position, element);
        }
        else {
            int item = sc.nextInt();
            list.remove(item);
        }
    }

    sc.close();
    System.out.println("The final list after performing queries is :- ");

    Iterator<Integer> iterate = list.iterator();

    while(iterate.hasNext()) {

        System.out.print(iterate.next()+" ");
    }
}

```

Output : -

The screenshot shows the Eclipse IDE with a Java project named 'Java_101_Question2'. The main editor displays the following code:

```
import java.util.ArrayList;

public class Java_101_Question2 {

    public static void main(String[] args) {
        List<Integer> list = new ArrayList<>();

        Scanner sc = new Scanner(System.in);

        int n = sc.nextInt();

        for(int i=0;i<n;i++) {
            list.add(sc.nextInt());
        }

        int queries = sc.nextInt();
    }
}
```

The right-hand side of the IDE shows the 'Outline' view with the following structure:

- HW_module
 - Java_101_Question2
 - main(String[]): void

The bottom of the IDE shows the 'Console' view with the following output:

```
<terminated> Java_101_Question2 [Java Application] C:\Program Files\Java\jdk-11.0.13\bin\javaw.exe (06-Mar-2022, 9:55:55 AM - 9:55:58 AM)
5
12 0 1 78 12
2
Insert
5 23
Delete
0
The final list after performing queries is :-
0 1 78 12 23
```

Question-3) Java Map

Solution : -

```
import java.util.HashMap;
```

```
import java.util.Scanner;
```

```
public class java_101_Question3 {
```

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

```
HashMap<String, Integer> h1 = new HashMap<>();
Scanner sc = new Scanner(System.in);
int n=sc.nextInt();
sc.nextLine();

for(int i=0;i<n;i++)
{
    String name=sc.nextLine();
    int phone=sc.nextInt();
    sc.nextLine();
    h1.put(name,phone);
}
while(sc.hasNext())
{

    String s=sc.nextLine();
    try
    {
        int result=h1.get(s);
        System.out.println(s+"="+result);
    }
    catch(Exception e)
    {
        System.out.println("Not found");
    }
}
```

}

}

Output :-

The screenshot shows the Eclipse IDE with a Java file named `java_101_Question3.java`. The code defines a class `java_101_Question3` with a `main` method. The `main` method uses a `HashMap` to store names and phone numbers, and a `Scanner` to read input from the user. The output in the console shows the program running and processing the input.

```
import java.util.HashMap;

public class java_101_Question3 {

    public static void main(String[] args) {

        HashMap<String, Integer> h1 = new HashMap<>();

        Scanner sc = new Scanner(System.in);

        int n=sc.nextInt();
        sc.nextLine();

        for(int i=0;i<n;i++)
```

Output:

```
3
uncle sam
99912222
tom
11122222
harry
12299933
uncle sam
uncle sam=99912222
uncle tom
Not found
harry
harry=12299933
```