

1)

```
package demo;
```

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

```
public class Long {
```

```
    public static String find(String s) {
```

```
        if (s == null || s.length() == 0) {
```

```
            return "length 0 and \"\"";
```

```
        }
```

```
        int max = 0;
```

```
        int start = 0;
```

```
        int startIndex = 0;
```

```
        int endIndex = 0;
```

```
        HashMap<Character, Integer> charIndex = new
```

```
HashMap<>();
```

```
        for (int end = 0; end < s.length(); end++) {
```

```
            char c = s.charAt(end);
```

```
            if (charIndex.containsKey(c) && charIndex.get(c) >= start) {
```

```
                start = charIndex.get(c) + 1;
```

```
            }
```

```
            charIndex.put(c, end);
```

```
            if (end - start + 1 > max) {
```

```
                max = end - start + 1;
```

```
                startIndex = start;
```

```
                endIndex = end;
```

```
            }
```

```
        }
```

```
        String longestSubstring = s.substring(startIndex, endIndex + 1);
```

```

        return "length " + max + " \"" + longestSubstring + "\"";
    }

    public static void main(String[] args) {
        String input1 = "xyzxyzyy";
        String result1 = find(input1);
        System.out.println("Input: " + input1);
        System.out.println("Output: " + result1);

        String input2 = "yyyyyy";
        String result2 = find(input2);
        System.out.println("Input: " + input2);
        System.out.println("Output: " + result2);
    }
}

```

Output:

```

Input: xyzxyzyy
Output: length 3 "xyz"
Input: yyyyyy
Output: length 1 "y"

```

2)

```

package demo;
import java.util.*;
public class Ext extends Exception {
    Scanner s = new Scanner(System.in);
    int age;
    char vote;
    public void m1() {
        System.out.println("Enter age");
        age=s.nextInt();

        if(age>=18) {
            try {

```

```

        System.out.println("Enter your vote A or B:");
        System.out.println("Enter your choice:");
        vote=s.next().charAt(vote);

        }catch(Exception e){
            System.out.println("Please enter age..");

        }
        finally{
            System.out.println("Your vote succesffuly
saved..");
        }
    }else {
        System.out.println("please enter age.");
    }

}

    public static void main(String[] args) {
        Ext e = new Ext();
        e.m1();
    }

}

```

Output:

Enter age

34

Enter your vote A or B:

Enter your choice:

A

Your vote succesffuly saved..

3)

```
package demo;
import java.util.*;
public class Hmap {

    public static void main(String[] args) {
        HashMap<Integer,String>map=new
HashMap<Integer,String>();
        map.put(1,"Aarthi");
        map.put(2,"Aadhi");
        map.put(3,"Adhidhi");
        map.put(4,"Anitha");
        map.put(4,"Aruna");
        map.put(5, "Arun");
        System.out.println(map);
        System.out.println(map.get(4));
        System.out.println(map.keySet());
        System.out.println(map.values());

    }

}
```

Output:

```
{ 1=Aarthi, 2=Aadhi, 3=Adhidhi, 4=Aruna, 5=Arun}
Aruna
[1, 2, 3, 4, 5]
[Aarthi, Aadhi, Adhidhi, Aruna, Arun]
```