Character : is Letter ()
           : is Digit ()

A man, a plan, a canal: Panama $\longrightarrow$ X

A man, a plan, a canal: Panama

char

amanaplanacanalpanama

terms = 9

97 - 122 // (48 - 57)

9

HW_palindromic string 13

```
1 import java.io.*;
2 import java.util.*;
3 import java.text.*;
4 import java.math.*;
5 import java.util.regex.*;
6
7 public class Solution {
8
9     public static void main(String[] args) {
10        /* Enter your code here. Read input from STDIN. Print output to STDOUT. Your class should be named Soluti
11        Scanner sc = new Scanner(System.in);
12        String str  = sc.nextLine().toLowerCase();
13        int n = str.length();
14      String ans =  lower(str,n);
15        System.out.println(isPalindrome(ans));
16    }
17    public static String lower(String str,int n){
18        String temp="";
19        for(int i=0;i<n;i++){
20          char ch = str.charAt(i);
21            if(Character.isLetterOrDigit(ch)){
22                temp+=ch;
23            }
24        }
25        return temp;
26    }
27     public static boolean isPalindrome(String str){
28        int start=0;
29        int end = str.length()-1;
30        while(start<end){
31            if(str.charAt(start)!=str.charAt(end)){
32                return false;
33            }
34            start++;
35            end--;
36        }
37        return true;
38 }
39 }
```

ABADA

A

A B

A B A —— ①

A B A D

A B A D A —— ②

B

B A

B A D

B A D A

A

A D

A D A —— ③

D

D A

A   ⑤

$\dfrac{5 \times 6}{2}$ $\dfrac{30}{2}$

15

B → 12

C = 6

```java
public static void countSubsting(String str,int n){
    int count=0, maxlength=0;
    String ans="";
    for(int i=0;i<n;i++){
        for(int j=i;j<n;j++){
            String s = str.substring(i,j+1);
            if(s.length()>1 && s.charAt(0)=='A' && s.charAt(s.length()-1)=='A'){
                count++;
                if(s.length() > maxlength){
                    maxlength = s.length();
                    ans = s;
                }
            }
        }
    }

    if(count==0){
        System.out.println(-1);
    }else{
    System.out.println(count);
    System.out.println(maxlength);
    System.out.println(ans);
    }
```

$C = 0, max = 0$
$ans = " "$

$(int \; i = 0, \; i < n, \; i++)$

$for (int \; j = i; \; j < n; \; j++)$
$\&$

$str.substring (0, 1);$
$1 - 1$

exclusive

$S = ABA$ $\overline{ABADA}$

$\overline{S-1}$

$3-1 = 2$ $\textcircled{4}$

Desired String

```java
1  import java.io.*;
2  import java.util.*;
3  import java.text.*;
4  import java.math.*;
5  import java.util.regex.*;
6
7  public class Solution {
8
9      public static void main(String[] args) {
10         /* Enter your code here. Read input from STDIN. Print output to STDOUT. Your class should be named Solution. */
11         Scanner sc = new Scanner(System.in);
12         String str  = sc.nextLine();
13          int n = str.length();
14         countSubsting(str,n);
15     }
16     public static void countSubsting(String str,int n){
17         int count=0, maxlength=0;
18         String ans="";
19         for(int i=0;i<n;i++){
20             for(int j=i;j<n;j++){
21                 String s = str.substring(i,j+1);
22                 if(s.length()>1 && s.charAt(0)=='A' && s.charAt(s.length()-1)=='A'){
23                     count++;
24                     if(s.length() > maxlength){
25                      maxlength = s.length();
26                      ans = s;
27                     }
28                 }
29             }
30
31         }
32         if(count==0){
33             System.out.println(-1);
34         }else{
35         System.out.println(count);
36         System.out.println(maxlength);
37         System.out.println(ans);
38         }
39
40     }
```

Check Subsequence

```java
 1 import java.io.*;
 2 import java.util.*;
 3 import java.text.*;
 4 import java.math.*;
 5 import java.util.regex.*;
 6
 7 public class Solution {
 8
 9     public static void main(String[] args) {
10         /* Enter your code here. Read input from STDIN. Print output to STDOUT. Y
11         Scanner sc = new Scanner(System.in);
12         String str = sc.next();
13         String tar = sc.next();
14
15         boolean ans = subsequence(str,tar);
16         if(ans){
17             System.out.println("True");
18         }
19         else{
20             System.out.println("False");
21         }
22     }
23     public static boolean subsequence(String str,String tar){
24         int start=0;
25         int current=0;
26         while(start<str.length() && current < tar.length()){
27             if(str.charAt(start)==tar.charAt(current)){
28                 start++;
29                 current++;
30             }
31             else{
32                 current++;
33             }
34         }
35         if(start==str.length()){
36             return true;
37         }
38         return false;
39     }
40 }
```