
Author : Pradyot Patil

Roll No : 53 [7B]

Date : 01-OCT-2018

```
package sdts;

import java.util.* ;

/**
 * @author paddi
 */

public class Sdts {

    static String s="while(a<b)"+"{"+"
    "if(a<b) then " +
    " {" +
    "    x=y+z " +
    "    p=q+r" +
    "    a=b+c" +
    " }" +
    " else " +
    "    p=q+r" +
    "} ";

    public static void main(String[] args) {
        // TODO code application logic here

        String temp ;

        String arr[]=new String[15] ;

        int arr2[]=new int[15] ;

        int front=0 ;

        int k=0 ;
```

```

int addr=0 ;
for(int i=0;i<s.length();i++)
{
    //System.out.println(s.charAt(i)+" "+i );
    if(s.charAt(i)==' ')
        continue;
    else if(s.charAt(i)=='}')
    {
        k-- ;
        //System.out.println(k+"yo"+addr);
        if(k>=0)
            arr[arr2[k]]=arr[arr2[k]]+" "+(addr+100);
    }
    else
    {
        if(i+5<s.length() && s.substring(i, i+5).compareTo("while")==0)
        {
            int j=i;
            temp="";
            while(s.charAt(j)!='{')
            {
                temp=temp+s.charAt(j) ;
                j++ ;
            }
            temp=(addr+100)+" "+temp+" goto "+(addr+102) ;
            //System.out.println(temp);
            addr++ ;
            arr[front++]=temp ;
            temp=(addr+100)+" "+"goto " ;
            addr++ ;
            arr[front++]=temp ;

```

```

arr2[k++]=front-1 ;

System.out.println("yo"+k);

}

else if(i+2<s.length() && s.substring(i, i+2).compareTo("if")==0)
{
    int j=i;
    temp="" ;
    while(s.charAt(j)!='{')
    {
        temp=temp+s.charAt(j) ;
        j++ ;
    }
    temp=(addr+100)+" "+temp+" goto "+(addr+102) ;
    addr++ ;
    arr[front++]=temp ;
    temp=(addr+100)+" "+"goto " ;
    addr++ ;
    arr[front++]=temp ;
    arr2[k++]=front-1 ;
    System.out.println("yo"+k);

}

else if(i+4<s.length() && s.substring(i, i+4).compareTo("else")==0)
{
    //k-- ;

    arr[arr2[k]]=arr[arr2[k]]+" "+(addr+100);
}

else if(i+5<s.length() && s.substring(i, i+5).charAt(1)=='=' && s.substring(i,
i+5).charAt(3)=='+')
{

```

```

        temp=(addr+100)+" t1= "+s.charAt(i+2)+" "+s.charAt(i+4) ;
        arr[front++]=temp ;
        addr++ ;
        temp=(addr+100)+" "+s.charAt(i)+"="+t1";
        arr[front++]=temp ;
        addr++ ;
    }
    //System.out.println(s.charAt(i)+" "+i );
}
}
for(int i=0;i<front;i++)
{
    System.out.println(arr[i] );
}
}

}

/*OUTPUT
100 while(a<b) goto 102
101 goto 112
102 if(a<b) then    goto 104
103 goto 110 110
104 t1= y+z
105 x=t1
106 t1= q+r
107 p=t1
108 t1= b+c
109 a=t1
110 t1= q+r
111 p=t1
*/

```