

Multiple sequence Alignment

```

import java.io.*;
import java.util.*;

public class Consensus
{
    public static void main(String str[]) throws IOException
    {
        int n, i,j,k,count;
        String seq[],cons[];
        ArrayList<Integer> a = new ArrayList<Integer>();
        ArrayList s = new ArrayList();
        BufferedReader br=new BufferedReader(new InputStreamReader(System.in));
        System.out.println("Enter the no of Sequences");
        n=Integer.parseInt(br.readLine());
        seq=new String[n];
        System.out.println("Enter sequences");
        for(i=0;i<n;i++)
            seq[i]=br.readLine();
        cons=new String[seq[0].length()];
        for(j=0;j<seq[0].length();j++)
            cons[j]=" ";
        for(j=0;j<seq[0].length();j++)
        {
            a.clear();
            s.clear();
            for(i=0;i<n;i++)
            {
                count=1;

```

```

for(k=i+1;k<n;k++)
{

if(seq[i].charAt(j)==seq[k].charAt(j))
count++;

}
System.out.println("count="+count);
a.add(count);
s.add(seq[i].charAt(j));
}
/**Updated Snippet 1**/
Set<String> set = new HashSet<>(s);
ArrayList setlist = new ArrayList(set);
Collections.sort(setlist);
if (setlist.contains('-') && setlist.size()==2){
cons[j]+="-"+setlist.get(1);
}
else if (setlist.size()==1){
cons[j]+="-"+setlist.get(0);
}
else{
int m = Collections.max(a);
int index=a.indexOf(m);
System.out.println("Max="+m);
cons[j]+=s.get(index);
System.out.println("index="+index);
for(i=index+1;i<a.size();i++)
{

```

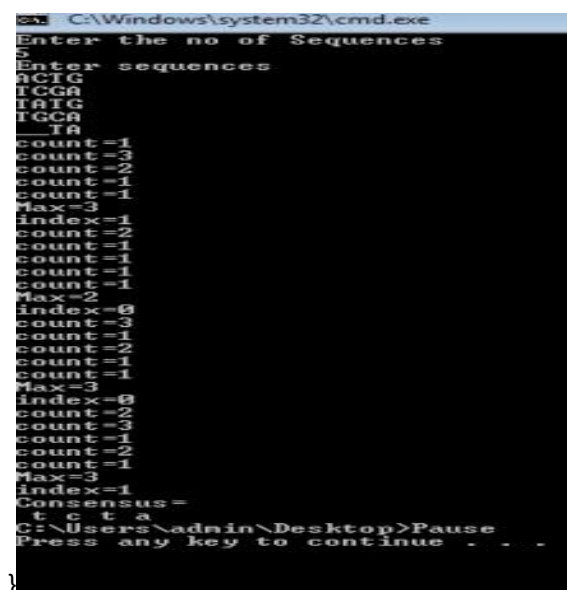
```

if(a.get(i)==m)
cons[j]+="/" +s.get(i);
}
}
}

System.out.println("Consensus=");
for(j=0;j<seq[0].length();j++){
/**Updated Snippet 2**/
if(cons[j].length()==2)
System.out.print(cons[j].toLowerCase());
else if(cons[j].length()==3)
System.out.print(cons[j].replace("-", ""));
else
System.out.print(cons[j]);
}
}

```

OUTPUT :



```

C:\Windows\system32\cmd.exe
Enter the no of Sequences
5
Enter sequences
ACIG
TCGA
TAIG
TGCA
TA
count=1
count=3
count=2
count=1
count=1
Max=3
index=1
count=2
count=1
count=1
count=1
count=1
Max=2
index=0
count=3
count=1
count=2
count=1
count=1
Max=3
index=0
count=2
count=3
count=1
count=2
count=1
Max=3
index=1
Consensus=
t c t a
C:\Users\admin\Desktop>Pause
Press any key to continue . . .

```