```java
1
2    //Name -
3    //Date -
4    //Class -
5    //Lab   -
6
7    import static java.lang.System.*;
8    import java.util.Arrays;
9
10   public class Caesar implements Cipher
11   {
12       private final String alpha = "ABCDEFGHIJKLMNOPQRSTUVWXYZ";
13       private String shiftSt;
14       private int howFar;
15
16       public Caesar()
17       {
18           howFar = (int)( Math.random() * 26 );
19           char[] iCharArray = alpha.toCharArray();
20           char[] nCharArray = new char[26];
21           int p = howFar;
22           for( int i = 0; i < alpha.length(); i++ ) {
23               if( p == iCharArray.length )
24                   p = 0;
25               nCharArray[p] = iCharArray[i];
26               p++;
27           }
28
29           shiftSt = "";
30           for( char c: nCharArray )
31               shiftSt += c;
32       }
33
34       public Caesar(int far)
35       {
36           if(far == 0)
37               howFar = (int)( Math.random() * 26 );
38           else
39               howFar = far;
40
41           char[] iCharArray = alpha.toCharArray();
42           char[] nCharArray = new char[26];
43           int p = howFar;
44           for( int i = 0; i < alpha.length(); i++ ) {
45               if( p == iCharArray.length )
46                   p = 0;
47               nCharArray[p] = iCharArray[i];
48               p++;
49           }
50
51           shiftSt = "";
52           for( char c: nCharArray )
53               shiftSt += c;
54       }
55
56       public String encode(String toEncode)
57       {
58           char[] fCharArray = shiftSt.toCharArray();
59           char[] oCharArray = toEncode.toUpperCase().toCharArray();
60           char[] nCharArray = new char[toEncode.length()];
61           for( int i = 0; i < oCharArray.length; i++ ) {
62               if( alpha.indexOf( oCharArray[i] ) == -1 ) {
63                   nCharArray[i] = oCharArray[i];
64                   i++;
65               }
66               nCharArray[i] = fCharArray[ alpha.indexOf( oCharArray[i] ) ];
```

```java
67              }
68
69              String ret = "";
70              for(char c: nCharArray)
71                  ret += c;
72
73              return ret;
74          }
75
76      public String decode(String toDecode)
77      {
78          char[] iCharArray = alpha.toCharArray();
79          char[] oCharArray = toDecode.toUpperCase().toCharArray();
80          char[] nCharArray = new char[toDecode.length()];
81          for( int i = 0; i < oCharArray.length; i++ ) {
82              if( alpha.indexOf( oCharArray[i] ) == -1 ) {
83                  nCharArray[i] = oCharArray[i];
84                  i++;
85              }
86              nCharArray[i] = iCharArray[ shiftSt.indexOf( oCharArray[i] ) ];
87          }
88          String ret = "";
89          for(char c: nCharArray)
90              ret += c;
91
92          return ret;
93      }
94  }
```