Name:Mohan Ramchandra Patil
Reg. No : 19141267

IS Exp7: . Implement Poly-Alphabetic Cipher

Code:

```
import java.util.*;
public class OneTimePad {
char vignereTable[][] = new char[26][26];
public void GenereatePad() {
char alpharray[] = new char[26];
char c = 'a';
for (int x = 0; x < 26; x++) {
alpharray[x] = c;
c++;
}
int i = 0, j = 0, k = 0;
while (i < 26) {
k = i;
for (j = 0; j < 26; j++) {
if (k >= 26)
k = 0;
vignereTable[i][j] = alpharray[k++];
} i++;
}
}
private String key;
public OneTimePad(String k) {
key = k;
}
public String encrypt(String plainText) {
char[] plainTextArr = plainText.toCharArray();
while (key.length() < plainText.length()) {
key += key;
}
key = key.substring(0, plainText.length());
System.out.println(key);
char[] keyArray = key.toCharArray();
String cipherText = "";
for (int i = 0; i < plainText.length(); i++) {
int rowpos = keyArray[i] - 'a';
int colpos = plainTextArr[i] - 'a';
cipherText += vignereTable[rowpos][colpos];
}
return cipherText;
}
public String decrypt(String cipherText) {
String plainText = "";
char[] cipherTextArr = cipherText.toCharArray();
char[] keyArray = key.toCharArray();
```

```
char[] plainTextArr = new char[keyArray.length];
for (int i = 0; i < keyArray.length; i++) {
int rowpos = keyArray[i] - 'a';
int cipherpos = new String(vignereTable[rowpos]).indexOf(cipherTextArr[i]);
plainTextArr[i] = vignereTable[0][cipherpos];
}
plainText = new String(plainTextArr);
return plainText;
}
public static void main(String args[]) {
Scanner console = new Scanner(System.in);
System.out.println("Enter a text key in lower case");
String keyText = console.nextLine();
OneTimePad algo = new OneTimePad(keyText);
algo.GenereatePad();
System.out.println("Enter the plain text");
String plainText = console.nextLine();
String cipherText = algo.encrypt(plainText);
System.out.println("The encrypted text is " + cipherText);
plainText = algo.decrypt(cipherText);
System.out.println("The decrypted text is " + plainText);
}
}
```

Output:

```
PS C:\Users\mohan\Desktop\sub codes\is codes\7> javac OneTimePad.java
PS C:\Users\mohan\Desktop\sub codes\is codes\7> java OneTimePad
Enter a text key in lower case
patil
Enter the plain text
mohan
patil
The encrypted text is boaiy
The decrypted text is mohan
```