**Vigenère Cipher**

import java.io.\*;

public class vigenerecipher

{

public String encrypt(String keyword, String line) //Encryption Method with input as KEY and PLAIN-TEXT

{

String result="";

int offset;

int j=0,shift;

for(int i=0;i<line.length();i++)

{

if(line.charAt(i)>='a'&&line.charAt(i)<='z') // For Lower Case

{

shift=((int)keyword.charAt(j))-97;

j++;

j%=keyword.length();

offset=((int)(line.charAt(i)))-97;

offset=(offset+shift)%26;

result+=(char)(offset+97);

}

else if(line.charAt(i)>='A'&&line.charAt(i)<='Z') //For Upper Case

{

shift=((int)keyword.charAt(j))-65;

j++;

j%=keyword.length();

offset=((int)(line.charAt(i)))-65;

offset=(offset+shift)%26;

result+=(char)(offset+65);

}

else

result=result+line.charAt(i);

}

return result;

}

public String decrypt(String keyword, String line) //Decryption Method with input as Cipher-Text and Key

{

String result="";

int offset;

int j=0,shift;

for(int i=0;i<line.length();i++)

{

if(line.charAt(i)>='a'&&line.charAt(i)<='z') //For Lower Case

{

if(line.charAt(i)!=' ')

{

shift=((int)keyword.charAt(j))-97;

j++;

j%=keyword.length();

offset=((int)(line.charAt(i)))-97;

offset=(offset-shift)%26;

if(offset<0)

offset+=26;

result+=(char)(offset+97);

}

}

else if(line.charAt(i)>='A'&&line.charAt(i)<='Z') //For Upper Case

{

if(line.charAt(i)!=' ')

{

shift=((int)keyword.charAt(j))-65;

j++;

j%=keyword.length();

offset=((int)(line.charAt(i)))-65;

offset=(offset-shift)%26;

if(offset<0)

offset+=26;

result+=(char)(offset+65);

}

}

else

result=result+line.charAt(i);

}

return result;

}

public static void main(String args[])throws IOException //Main Method

{

vigenerecipher obj=new vigenerecipher();

BufferedReader in=new BufferedReader(new InputStreamReader(System.in));

int choice;

System.out.println("");

System.out.println("Menu:\n1: Encryption\n2: Decryption");

choice=Integer.parseInt(in.readLine());

System.out.println("");

System.out.println("Enter the keyword: ");

String keyword=in.readLine();

System.out.println("");

System.out.println("Enter the Plain-Text: ");

String line=in.readLine();

System.out.println("");

System.out.println("Result:");

switch(choice)

{

case 1: {

System.out.println("");

System.out.println(obj.encrypt(keyword,line));

}

break;

case 2: {

System.out.println("");

System.out.println(obj.decrypt(keyword,line));

}

break;

default:

{

System.out.println("");

System.out.println("Invalid input!");

}

break;

}

}

}



