PROJECT TOPIC: AFFINE CHIPER

PURPOSE: This project was performed during academic session 2022-23 for the fulfillment of the requirement for semester-1 Syllabus of the college. This project is an individual work.

DESCRIPTION OF THE CODE:

For this program, key1=7, key2=2.

THE main() METHOD:

The main() method includes a scanner variable-scan, and the plaintext input for the program.

It also contains two print statements-

1. To print the encrypted cipher text, by using the method encrypt().

2. To print the decrypted plaintext, by using the method decrypt().

THE encrypt() METHOD:

The encrypt() method has a string parameter and argument- plaintext.

Using a for loop, we obtain each character of the string plaintext in lowercase.

For each character of the string, we obtain a numeric value defined by the integer variable numvalue1, which gives integer value of the character-97.

We then define integer variable- message1, which gives the value of (numvalue1\*key1+key2)mod26.

Then character variable temp1 gives the character value corresponding to message1+65.

Finally, the values obtained by temp1 are added to the string encrypted and it is returned by the function.

THE decrypt() METHOD:

The decrypt() method has a string parameter and argument- chipertext.

Using a for loop, we obtain the modular multiplicative inverse.

Using another for loop, we obtain each character of the string chipertext in uppercase.

For each character of the string, we obtain a numeric value defined by the integer variable numvalue2, which gives integer value of the character-65.

We then define integer variable- message2, which gives the value of ((numvalue2-key2)\*inverse)%26.

We check if the value obtained in message2 is negative. If it is negative, we add 26 to it.

Then character variable temp2 gives the character value corresponding to message2+97.

Finally, the values obtained by temp2 are added to the string decrypted and it is returned by the function.