5.Affine Caesar Cipher

Code:

class Main{

static int a = 17;

static int b = 20;

static String encryptMessage(char[] msg){

String cipher = "";

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

if (msg[i] != ' '){

cipher = cipher + (char) ((((a \* (msg[i] - 'A')) + b) % 26) + 'A');

} else {

cipher += msg[i];

}

}

return cipher;

}

static String decryptCipher(String cipher){

String msg = "";

int a\_inv = 0;

int flag = 0;

for (int i = 0; i < 26; i++)

{

flag = (a \* i) % 26;

if (flag == 1)

{

a\_inv = i;

}

}

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

{

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

{

msg = msg + (char) (((a\_inv \*

((cipher.charAt(i) + 'A' - b)) % 26)) + 'A');

}

else {

msg += cipher.charAt(i);

}

}

return msg;

}

public static void main(String[] args)

{

String msg = "AFFINE CIPHER";

String cipherText = encryptMessage(msg.toCharArray());

System.out.println("Encrypted Message is : " + cipherText);

System.out.println("Decrypted Message is: " + decryptCipher(cipherText));

}

}

Output:

Encrypted Message is : UBBAHK CAPJKX

Decrypted Message is: AFFINE CIPHER