**class** **PlayFair** {

@Override

**public** String encrypt(String plainText, String key) {

**while**(i<n)

{

**char** ch1 = plainText.charAt(i);

**char** ch2;

**if**(i==n-1)

ch2='X';

**else**

ch2 = plainText.charAt(i+1);

**if**(ch1!=ch2)

{

**this**.substitute(cipherText,ch1,ch2);

i = i+2;

}

**else**

{

ch2 = 'X';

**this**.substitute(cipherText,ch1,ch2);

i++;

}

}

**return** cipherText.toString();

}

@Override

**public** String decrypt(String cipherText, String key) {

**while**(i<n)

{

**char** ch1 = cipherText.charAt(i);

**char** ch2;

**if**(i==n-1)

ch2='X';

**else**

ch2 = cipherText.charAt(i+1);

**if**(ch1!=ch2)

{

**this**.dsubstitute(plainText,ch1,ch2);

i = i+2;

}

**else**

{

ch2 = 'X';

**this**.dsubstitute(plainText,ch1,ch2);

i++;

}

}

**return** plainText.toString();

}

}

**Key:** HELLO

**Output:**

QBLGWCEGELFLKOFNQOLTAKKOSPOUKBTUANKASTQOOUCLCOMFQTCTLNQOLAQUCWHPTEQSLCCTLNNXEHMFRDQUBQGEMYTFROZMOHKPEAVKHMWHFSEQATBAQOMQUGSUEELGQMNJOXCHOKDHEYTFQUFNQOLWLHSUEEOPFSELHPSUEHRYLKEPLCEYJOCWCELULRGEJKPFQOTEZPOQELWHTYKPYFQOLHKQHGHYLENQGQSTUQMAKMLHNFTPUOKPBQKWEZOLFCEGNRHNQONFSUELZUKAUEKQAQSUQLOPBLLUNQECWCBQYFENCULHUTKJTDTENSELLCCALJWTLRJKUEYFQELGDOEYPFLYLFKOXLRMTFXRVECWLENXDEFYELRXCWORETJOMVPQTUOHZXNQLJXOKJRDOARLYFQOLEAOLEOPBMQMMZKAGSTYMHQOHCOLLCKPDUYFMZKABLOFRGOPKNGPKPOKFYBQPFTLGRQKATQLQOMQEADLOAVKTYELCULUQLKVMHDXKAEPFNNQKPLPKPQULEOQELTQMTBQPKPFKPYFNQOJFYCQMHHMOPSOVFQUQOTEZPLJEUDHLCDEATMXEEQOAKLHKCOQELTFKFEHOHKFLEQOLROKRLFNUMEGLEOPBLCQQTBQPFNXBELWCROQELTEEUKPBGATTYHPTFNFQSEUQNBNBKHOHPQETLFTMQJKLCNXWCUMKQOUETBJHFJQPFZUOPMLFLYKKPQOCKQSWCTYBQBAHGHYLKVOLHBLOPBLPBELSTQNDLEXCWLKOPZOKQLQBQMUBJQUTFFTLWHWCWOAENTLQUFNHPQEQLKJQLOPBMPOTOGERLQOOWFESAFMFYEHWHJKKRLCKLZUOQELWCKVLULQUSOPCLBLQOLRTPQLFTLHHMSYSOCEOZFLYKQOLREHNYEHMFWCWHHOLCQOORANNLTUSQPFFNQOLOLGCLQEGQQNRYLUEAKAOLXLTUTWKPFUETLHBENQBQQLATDMHKQOCWEHWHCHOKYFXLRLGSUGPGKPFVQOLWLRGEKAEAWCDXLEHZOCHOOLPKJOOPMLBMLCBQFESAFLMOXOKHFTQOACUEXLQLQMMZJKPFOPMXKJJKPFEHMFCTLNQNKLYFQNKLDAOPBKPFEUATMFKLLV