

PRAKTIKUM KRIPTOGRAFI

TUGAS 2



Nama : Novem Romadhofi Kika

NPM : 140810220083

Kelas : A

UNIVERSITAS PADJAJARAN

FAKULTAS MATEMATIKA DAN ILMU PENGETAHUAN ALAM

Program Studi S-1 Teknik Informatika

2024

2. Enkripsikan nama lengkap anda menggunakan Affine Cipher dan kembalikan menjadi plainteks, **a=9 b=[2 digit NPM akhir]**.

a = 9

b = 83

Novem

E (13) $\rightarrow (9(13) + 83) \bmod 26 = (117 + 83) \bmod 26 = 200 \bmod 26 = 18 \rightarrow S$

E (14) $\rightarrow (9(14) + 83) \bmod 26 = (126 + 83) \bmod 26 = 209 \bmod 26 = 1 \rightarrow B$

E (21) $\rightarrow (9(21) + 83) \bmod 26 = (189 + 83) \bmod 26 = 272 \bmod 26 = 12 \rightarrow M$

E (4) $\rightarrow (9(4) + 83) \bmod 26 = (36 + 83) \bmod 26 = 119 \bmod 26 = 15 \rightarrow P$

E (12) $\rightarrow (9(12) + 83) \bmod 26 = (108 + 83) \bmod 26 = 191 \bmod 26 = 9 \rightarrow J$

Jadi, enkripsi **Novem** menjadi SBMPJ

Romadhofi

E (17) $\rightarrow (9(17) + 83) \bmod 26 = (153 + 83) \bmod 26 = 236 \bmod 26 = 2 \rightarrow C$

E (14) $\rightarrow (9(14) + 83) \bmod 26 = (126 + 83) \bmod 26 = 209 \bmod 26 = 1 \rightarrow B$

E (12) $\rightarrow (9(12) + 83) \bmod 26 = (108 + 83) \bmod 26 = 191 \bmod 26 = 9 \rightarrow J$

E (0) $\rightarrow (9(0) + 83) \bmod 26 = 83 \bmod 26 = 5 \rightarrow F$

E (3) $\rightarrow (9(3) + 83) \bmod 26 = (27 + 83) \bmod 26 = 110 \bmod 26 = 6 \rightarrow G$

E (7) $\rightarrow (9(7) + 83) \bmod 26 = (63 + 83) \bmod 26 = 146 \bmod 26 = 16 \rightarrow Q$

E (14) $\rightarrow (9(14) + 83) \bmod 26 = (126 + 83) \bmod 26 = 209 \bmod 26 = 1 \rightarrow B$

E (5) $\rightarrow (9(5) + 83) \bmod 26 = (45 + 83) \bmod 26 = 128 \bmod 26 = 24 \rightarrow Y$

E (8) $\rightarrow (9(8) + 83) \bmod 26 = (72 + 83) \bmod 26 = 155 \bmod 26 = 25 \rightarrow Z$

Jadi, enkripsi **Romadhofi** menjadi CBJFGQBYZ

Kika

E (10) $\rightarrow (9(10) + 83) \bmod 26 = (90 + 83) \bmod 26 = 173 \bmod 26 = 17 \rightarrow R$

E (8) $\rightarrow (9(8) + 83) \bmod 26 = (72 + 83) \bmod 26 = 155 \bmod 26 = 25 \rightarrow Z$

E (10) $\rightarrow (9(10) + 83) \bmod 26 = (90 + 83) \bmod 26 = 173 \bmod 26 = 17 \rightarrow R$

E (0) $\rightarrow (9(0) + 83) \bmod 26 = 83 \bmod 26 = 5 \rightarrow F$

Jadi, enkripsi **Kika** menjadi RZRF

3. Buat repositori publik Github dengan format nama “[2 digit terakhir NPM]-Kripto24”

<https://github.com/Novem03/83-Kripto2024.git>

4. Buatlah program Shift Cipher dengan bahasa pemrograman bebas

Source code :

```
/*
Nama : Novem Romadhofi Kika
NPM : 140810220083
Kelas : A
Program : Shift Cipher
*/

#include <iostream>
#include <string>
using namespace std;

string encryptShiftCipher(string text, int key) {
    string result = "";

    for (int i = 0; i < text.length(); i++) {
        if (isupper(text[i])) {
            result += char((int(text[i] + key - 65) % 26 + 65));
        }

        else if (islower(text[i])) {
            result += char((int(text[i] + key - 97) % 26 + 97));
        }

        else {
            result += text[i];
        }
    }
    return result;
}

string decryptShiftCipher(string text, int key) {
    string result = "";

    for (int i = 0; i < text.length(); i++) {
        if (isupper(text[i])) {
            result += char((int(text[i] - key - 65 + 26) % 26 + 65));
        }
    }
}
```

```

        else if (islower(text[i])) {
            result += char(int(text[i] - key - 97 + 26) % 26 + 97);
        }
        else {
            result += text[i];
        }
    }
    return result;
}

```

```

int main() {
    string text;
    int key;

    cout << "Masukkan teks: ";
    getline(cin, text);

    cout << "Masukkan kunci (shift): ";
    cin >> key;

    string encrypted = encryptShiftCipher(text, key);
    cout << "Hasil enkripsi: " << encrypted << endl;

    string decrypted = decryptShiftCipher(encrypted, key);
    cout << "Hasil dekripsi: " << decrypted << endl;

    return 0;
}

```

Screenshoot Program :

```

PS C:\Semester 5\Praktikum Kriptografi\Tugas 2> g++ shiftcipher.cpp -o w
PS C:\Semester 5\Praktikum Kriptografi\Tugas 2> ./w
Masukkan teks: NOVEM ROMADHOFI KIKA
Masukkan kunci (shift): 3
Hasil enkripsi: QRYHP URPDGKRIL NLND
Hasil dekripsi: NOVEM ROMADHOFI KIKA

```