

Tugas 5

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Source Code:

```
def main():
    choice = ""

    while True:
        print("=====")
        print("VIGENERE CIPHER")
        print("1. Encrypt")
        print("2. Decrypt")
        print("3. Exit")
        choice = input("Please chose action (1/2/3): ")

        match choice:
            case "1":
                plainText = input("Input plaintext: ")
                key = input("Input Key: ")
                print("Hasil Enkripsi: " + encryption(key, plainText))

            case "2":
                cipherText = input("Input ciphertext: ")
                key = input("Input Key: ")
                print("Hasil Enkripsi: " + decryption(key, cipherText))

            case "3":
                print("BYE BYE")
                break

            case _:
                print("please choose given choice")

def encryption(key: str, text: str) -> str:
    # string untuk menyimpan cipher text yang akan direturn
    encrypted = ""

    # fungsi string manipulation untuk symbol
```

```

symbol = {}
text_list = list(text)

for i in range(len(text)):
    if not text[i].isalpha():
        symbol[i] = text[i]
        text_list.remove(text[i])
text = ''.join(text_list)

# fungsi string manipulation untuk huruf kapital
upper = []
for i in range(len(text)):
    if text[i].isupper():
        upper.append(i)

text = text.lower()
key = key.lower()

# pembentukan kunci vigenere
i = 0
while(len(key) != len(text)):
    if(i == len(key)):
        i = 0
    key += key[i]
    i += 1

# algoritma shift dengan kunci vigenere
for i in range(len(text)):
    encrypted += chr((ord(text[i]) - ord('a') +
                    ord(key[i]) - ord('a')) % 26 + ord('a'))

# fungsi string manipulation untuk huruf kapital
for i in range(len(upper)):
    encrypted = encrypted[:upper[i]] + \
        encrypted[upper[i]].swapcase() + encrypted[upper[i]+1:]

# fungsi string manipulation untuk symbol
for x, y in symbol.items():
    encrypted = encrypted[:x] + y + encrypted[x:]

return encrypted

```

```

def decryption(key: str, text: str) -> str:

```

```

# string untuk menyimpan plain text yang akan direturn
decrypted = ""

# fungsi string manipulation untuk symbol
symbol = {}
text_list = list(text)

for i in range(len(text)):
    if not text[i].isalpha():
        symbol[i] = text[i]
        text_list.remove(text[i])
text = ''.join(text_list)

# fungsi string manipulation untuk huruf kapital
upper = []
for i in range(len(text)):
    if text[i].isupper():
        upper.append(i)

text = text.lower()
key = key.lower()

# pembentukan kunci vigenere
i = 0
while(len(key) != len(text)):
    if(i == len(key)):
        i = 0
    key += key[i]
    i += 1

print()

# algoritma shift dengan kunci vigenere
for i in range(len(text)):
    decrypted += chr(((ord(text[i]) - ord('a')) -
                    (ord(key[i]) - ord('a')) % 26 + ord('a'))

# fungsi string manipulation untuk huruf kapital
for i in range(len(upper)):
    decrypted = decrypted[:upper[i]] + \
        decrypted[upper[i]].swapcase() + decrypted[upper[i]+1:]

# fungsi string manipulation untuk symbol
for x, y in symbol.items():
    decrypted = decrypted[:x] + y + decrypted[x:]

```

```
    return decrypted

if __name__ == "__main__":
    main()
```

screenshot program:

Tampilan menu program

```
=====
VIGENERE CIPHER
1. Encrypt
2. Decrypt
3. Exit
Please chose action (1/2/3): 
```

Fungsi encrypt

```
=====
VIGENERE CIPHER
1. Encrypt
2. Decrypt
3. Exit
Please chose action (1/2/3): 1
Input plaintext: Hidup@Tenang
Input Key: bahagia
Hasil Enkripsi: Iikuv@Beoaug
```

Fungsi decrypt

```
=====
VIGENERE CIPHER
1. Encrypt
2. Decrypt
3. Exit
Please chose action (1/2/3): 2
Input ciphertext: Iikuv@Beoaug
Input Key: Bahagia
Hasil Enkripsi: Hidup@Tenang
```