In [1]:

```
import cryptography
```

Getting a key

First we get a key to Encrypt and Decrypt our file.

We won't delve in the details of cryptographpy

In [2]:

```
from cryptography.fernet import Fernet
```

In [3]:

```
key=Fernet.generate_key()

key
```

Out[3]:

```
b'jtANQxDf7w1TPxeNQ0dgQP7I9jjJBmOpXcfjvuI6qgM='
```

Everytime we generate a key it will be changed.

So we need to save it

In [4]:

```
file=open('key.txt','wb')
file.write(key)
file.close()
```

This will save the key to key.key

Encrypting a string

Now let's read the Key from the key.txt file to reliably encrypt the string

In [5]:

```
file=open('key.txt','rb')
key= file.read()
file.close()
key
```

Out[5]:

```
b'jtANQxDf7w1TPxeNQ0dgQP7I9jjJBmOpXcfjvuI6qgM='
```

In [6]:

```
message = "Excuse me, do you love as well as you dance? are you as hot in the bedroom as you are on the dancefloor?... oh... Oh really? Thank you, see ya. Bye!"
```

Let's print it and see how it looka

In [7]:

```
message
```

Out[7]:

```
'Excuse me, do you love as well as you dance? are you as hot in th
e bedroom as you are on the dancefloor?... oh... Oh really? Thank
you, see ya. Bye!'
```

Let's encode it now

In [8]:

```
encoded=message.encode()
```

This converts it to binary

In [9]:

```
encoded
```

Out[9]:

```
b'Excuse me, do you love as well as you dance? are you as hot in t
he bedroom as you are on the dancefloor?... oh... Oh really? Thank
you, see ya. Bye!'
```

In [10]:

```
f=Fernet(key)
encrypted= f.encrypt(encoded)
```

This creates an encryption based on the key

In [11]:

```
encrypted
```

Out[11]:

```
b'gAAAAABehEX6cmywYGlZByDa1qAk2p__URfoRUg34kLqAuGCFRVlS3Qi5vk_b89u
WK-WmSyRiYJjeGnrrS6KfVrHM_6TorDFkZbXjeE_RJpnR8GJZ1cUA1CgRtQoSfhd3A
crTKhm2MlWeNCZ3s6PpQ1jbuAGVBUlrrDwOAoGWbD3x6aK9c1U-g1wbIjllKPkp9Nf
2WjPJzlRTNu9-QOiRo7BzlTlO1V48vO1hZo2AYnOwG2zcYMHY1V1BAEH8DhuNHBJ8V
36SY6n-7UT9AcnwNkWhRhi6DQSBw=='
```

Decrypting

Now that we have the encrypted string, let's decrypt it: We are getting the key from the file just to make sure this works

In [12]:

```
file=open('key.txt','rb')
key2= file.read()
file.close()
key
```

Out[12]:

```
b'jtANQxDf7w1TPxeNQ0dgQP7I9jjJBmOpXcfjvuI6qgM='
```

In [13]:

```
f2 = Fernet(key2)
decrypted=f2.decrypt(encrypted)
decrypted
```

Out[13]:

```
b'Excuse me, do you love as well as you dance? are you as hot in t
he bedroom as you are on the dancefloor?... oh... Oh really? Thank
you, see ya. Bye!'
```

We can see that it's a binary object, let's nake it a string:

In [14]:

```
original_message=decrypted.decode()
original_message
```

Out[14]:

```
'Excuse me, do you love as well as you dance? are you as hot in th
e bedroom as you are on the dancefloor?... oh... Oh really? Thank
you, see ya. Bye!'
```

Now the original string is printed

Encrypting a file

- Get key

In [15]:

```
KeyFile=open('key.txt','rb')
key= KeyFile.read()
file.close()
key
```

Out[15]:

```
b'jtANQxDf7w1TPxeNQ0dgQP7I9jjJBmOpXcfjvuI6qgM='
```

- Open file to encrypt

In [16]:

```
with open('file.txt','rb') as k:
    Data= k.read()

fernet = Fernet(key)
encryptedfile=fernet.encrypt(Data)
```

In [17]:

```
encryptedfile
```

Out[17]:

```
b'gAAAAABehEYAxWzL05bNUuO7Fd10WrSaoZuygRSS-GDHECiiBWnKRY5j7nmuR4Tt
cGpZSKLaDZhQbfWxcfUD86_DH_fMC6W25XUcxwEL-NalLGaQhhYT3lHslmU-lBnul7
Nk3jBeqVYbKJoUpy3BXQDIRn5zb3shbxtRSRD5jnF95qPTvss4fxn8D9I1FBrDpo_Y
MnziZN9-opoZSsk4IofNidzyqG8IO0IR71Bqt_LUcu3XnWpe1RbL4PSTeJUHrVDwjZ
ehDoDNhIoDh7JFR-57JW_Ra_gIuw=='
```

In [18]:

```
with open('encryptedfile.txt','wb') as ek:
        ek.write(encryptedfile)
```

Decrypt

In [19]:

```
with open('encryptedfile.txt','rb') as k:
    Data= k.read()
```

In [20]:

```
fernet = Fernet(key)
decryptedfile=fernet.decrypt(Data)
```

In [21]:

```
decryptedfile
```

Out[21]:

```
b'Excuse me, do you love as well as you dance? are you as hot in t
he bedroom as you are on the dancefloor?... oh... Oh really? Thank
you, see ya. Bye!'
```

In [22]:

```
with open('decryptedfile.txt','wb') as ek:
        ek.write(decryptedfile)
```

In [ ]:

```

```