Encryption Tasks – Full Solutions

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1. Fernet Encryption (cryptography library)

Python Code:

```
from cryptography.fernet import Fernet

# 1. Generate key
key = Fernet.generate_key()
with open("fernet.key", "wb") as f:
    f.write(key)

# 2. Read data.txt
with open("data.txt", "rb") as f:
    data = f.read()

# 3. Encrypt
f_obj = Fernet(key)
ciphertext = f_obj.encrypt(data)

# 4. Save encrypted file
with open("encrypted_data.bin", "wb") as f:
    f.write(ciphertext)

# 5. Load encrypted file and decrypt
with open("encrypted_data.bin", "rb") as f:
    encrypted_data = f.read()

decrypted = f_obj.decrypt(encrypted_data)

# 6. Verify
print(decrypted.decode())
```

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2. simple-crypt Encryption

```
from simplecrypt import encrypt, decrypt

password = "Password123"

# 1. Load message.txt
with open("message.txt", "r") as f:
    message = f.read()

# 2. Encrypt
cipher = encrypt(password, message)

# 3. Save encrypted bytes
with open("secretmessage.bin", "wb") as f:
    f.write(cipher)

# 4. Load and decrypt
with open("secretmessage.bin", "rb") as f:
    encrypted = f.read()

plaintext = decrypt(password, encrypted)
print(plaintext.decode())
```

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3. Paramiko SSH Encryption

```
import paramiko

host = "localhost"
username = "admin"
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password = "root"

# 1. Load command
with open("command.txt", "r") as f:
    command = f.read().strip()

# 2. SSH connection
ssh = paramiko.SSHClient()
ssh.set_missing_host_key_policy(paramiko.AutoAddPolicy())
ssh.connect(host, username=username, password=password)

# 3. Execute command
stdin, stdout, stderr = ssh.exec_command(command)

# 4. Save output
output = stdout.read().decode()
with open("ssh_output.txt", "w") as f:
    f.write(output)

# 5. Close
ssh.close()
```