





Lab 1 - Shift Ciphers

 Date	@May 23, 2025 → June 1, 2025
 Mod	50.042 Foundations of CyberSecurity
 Status	Done
 Type	Lab

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```
import datetime
print("Execution time:", datetime.datetime.now(datetime.timezone.utc).strftime("%Y-%m-%d %H:%M:%S"))
```

Execution time: 2025-05-31 05:45:38

Part 1: Shift Cipher for printable input

```
PS C:\Users\wooi\OneDrive\Documents\Term 5\FCS\Foundation-of-cybersec\la
usage: ex1.py [-h] -i INPUT [-o OUTPUT] -k KEY -m MODE
ex1.py: error: the following arguments are required: -i/--input
```

```
PS C:\Users\wooi\OneDrive\Documents\Term 5\FCS\Foundation-of-cybersec\la
Warning: The script can only output .txt files. Changing extension from '.en' to '.t
Output file 'sherlock_short.txt' already exists. Do you want to overwrite it? (y/n): n
Operation cancelled.
```

```
PS C:\Users\wooi\OneDrive\Documents\Term 5\FCS\Foundation-of-cybersec\la
Warning: The script can only output .txt files. Changing extension from '.en' to '.t
```

Successfully encrypted the file.

Input file: C:\Users\wooi\OneDrive\Documents\Term 5\FCS\Foundation-of-cybersec
Output file: C:\Users\wooi\OneDrive\Documents\Term 5\FCS\Foundation-of-cybersec

#sherlock_encrypted.txt

{(hA

XU("%S!A\%"#U)fA-X%A-Q)A+)+Q""/A,U(/A"Q*UAY\$A*XUA#%(\$Y\$W)fA)Q,UA-

PS C:\Users\wooi\OneDrive\Documents\Term 5\FCS\Foundation-of-cybersec\la
ed.en -k 42 -m d

Warning: The script can only output .txt files. Changing extension from '.en' to '.txt'

Successfully decrypted the file.

Input file: C:\Users\wooi\OneDrive\Documents\Term 5\FCS\Foundation-of-cybersec

Output file: C:\Users\wooi\OneDrive\Documents\Term 5\FCS\Foundation-of-cybersec

#sherlock_decrypted.txt:

Mr. Sherlock Holmes, who was usually very late in the mornings, save upon those
days when he was seated at the breakfast table.

Part 2: Shift Cipher for binary input

PS C:\Users\wooi\OneDrive\Documents\Term 5\FCS\Foundation-of-cybersec\la

Encryption example for first byte:

Original byte: 0x4d

Key: 0x2a

Encrypted byte: 0x77

Successfully encrypted the file.

Input file: C:\Users\wooi\OneDrive\Documents\Term 5\FCS\Foundation-of-cybersec

Output file: C:\Users\wooi\OneDrive\Documents\Term 5\FCS\Foundation-of-cybersec

PS C:\Users\wooi\OneDrive\Documents\Term 5\FCS\Foundation-of-cybersec\la

Decryption example for first byte:

Encrypted byte: 0x77

Key: 0x2a

Decrypted byte: 0x4d

Successfully decrypted the file.

Input file: C:\Users\wooi\OneDrive\Documents\Term 5\FCS\Foundation-of-cybersec\la

Output file: C:\Users\wooi\OneDrive\Documents\Term 5\FCS\Foundation-of-cybersec\la

#sherlock_decrypted.txt:

Mr. Sherlock Holmes, who was usually very late in the mornings, save upon those
days when he was seated at the breakfast table.

Part 3: Break Shift Cipher of flag:

