

a. Encryption, good input

```
C:\Users\sohail\source\repos\lab1\lab1>cl Source.c
Microsoft (R) C/C++ Optimizing Compiler Version 19.34.31937 for x86
Copyright (C) Microsoft Corporation. All rights reserved.

Source.c
Microsoft (R) Incremental Linker Version 14.34.31937.0
Copyright (C) Microsoft Corporation. All rights reserved.

/out:Source.exe
Source.obj

C:\Users\sohail\source\repos\lab1\lab1>.\Source cipher.txt
Enter a string: hello world
Enter 1 to encrypt, 2 to decrypt: 1
IFMMP XPSME

C:\Users\sohail\source\repos\lab1\lab1>
```

b. Decryption, good input

```
C:\Users\sohail\source\repos\lab1\lab1>.\Source cipher.txt
Enter a string: IFMMP XPSME
Enter 1 to encrypt, 2 to decrypt: 2
HELLO WORLD

C:\Users\sohail\source\repos\lab1\lab1>
m: Build
...
ild: 0 succeeded, 0 failed, 1 up-to-date, 0 skipped =====
apsed 00:00.136 =====
```

- c. Encryption, demonstrating two input strings that only differ in case produce the same output

```
C:\Users\sohail\source\repos\lab1\lab1>.\Source cipher.txt
Enter a string: testing capitalization
Enter 1 to encrypt, 2 to decrypt: 1
UFTUJOH DBQJUBMJABUJPO

C:\Users\sohail\source\repos\lab1\lab1>.\Source cipher.txt
Enter a string: TestIng CapItAlIzATioN
Enter 1 to encrypt, 2 to decrypt: 1
UFTUJOH DBQJUBMJABUJPO

C:\Users\sohail\source\repos\lab1\lab1>
```

- d. Decryption, demonstrating two input strings that only differ in case produce the same output

```
C:\Users\sohail\source\repos\lab1\lab1>.\Source cipher.txt
Enter a string: UFTUJOH DBQJUBMJABUJPO
Enter 1 to encrypt, 2 to decrypt: 2
TESTING CAPITALIZATION

C:\Users\sohail\source\repos\lab1\lab1>.\Source cipher.txt
Enter a string: UfTuJoH DBQjuBmJAbujPo
Enter 1 to encrypt, 2 to decrypt: 2
TESTING CAPITALIZATION

C:\Users\sohail\source\repos\lab1\lab1>
```

- e. A test case demonstrating an error with letter duplication on the left side of a rule in the cipher file

```
File Edit F C:\Users\sohail\source\repos\lab1\lab1>.\Source cipher.txt
Enter a string: IFMMP XPSME
Enter 1 to encrypt, 2 to decrypt: 2
HELLO WORLD
A,B
B,C
C,D C:\Users\sohail\source\repos\lab1\lab1>.\Source cipher.txt
a,d Enter a string: testing capitalization
d,e Enter 1 to encrypt, 2 to decrypt: 1
E,F UFTUJOH DBQJUBMJABUJPO
f,g
G,H C:\Users\sohail\source\repos\lab1\lab1>.\Source cipher.txt
h,i Enter a string: TestIng CapItAlIzATioN
I,J Enter 1 to encrypt, 2 to decrypt: 1
j,k UFTUJOH DBQJUBMJABUJPO
k,l
l,M C:\Users\sohail\source\repos\lab1\lab1>.\Source cipher.txt
M,n Enter a string: UFTUJOH DBQJUBMJABUJPO
N,o Enter 1 to encrypt, 2 to decrypt: 2
o,p TESTING CAPITALIZATION
p,Q C:\Users\sohail\source\repos\lab1\lab1>.\Source cipher.txt
Q,r Enter a string: UfTuJoH DBQjuBmJAbujPo
R,s Enter 1 to encrypt, 2 to decrypt: 2
s,t TESTING CAPITALIZATION
t,u
u,v C:\Users\sohail\source\repos\lab1\lab1>.\Source cipher.txt
v,w Error: Duplicate character in cipher text
W,x
x,y C:\Users\sohail\source\repos\lab1\lab1>
y,Z
z,A
```

f. A test case demonstrating an error with letter duplication on the right side of a rule in the cipher file

Developer Command Prompt for VS 2022

cipher.txt

File Edit F

A,B

B,C

C,D

d,e

E,F

f,g

G,H

h,i

I,J

2,B

j,k

k,l

l,M

M,n

N,o

o,p

p,Q

Q,r

R,s

s,t

t,u

u,v

v,w

W,x

x,y

y,Z

z,A

Enter 1 to encrypt, 2 to decrypt: 2

HELLO WORLD

C:\Users\sohail\source\repos\lab1\lab1>.\Source cipher.txt

Enter a string: testing capitalization

Enter 1 to encrypt, 2 to decrypt: 1

UFTUJOH DBQJUBMJABUJPO

C:\Users\sohail\source\repos\lab1\lab1>.\Source cipher.txt

Enter a string: TesTing CapItAlIzATioN

Enter 1 to encrypt, 2 to decrypt: 1

UFTUJOH DBQJUBMJABUJPO

C:\Users\sohail\source\repos\lab1\lab1>.\Source cipher.txt

Enter a string: UFTUJOH DBQJUBMJABUJPO

Enter 1 to encrypt, 2 to decrypt: 2

TESTING CAPITALIZATION

C:\Users\sohail\source\repos\lab1\lab1>.\Source cipher.txt

Enter a string: UfTuJoH DBQjuBmJAbujPo

Enter 1 to encrypt, 2 to decrypt: 2

TESTING CAPITALIZATION

C:\Users\sohail\source\repos\lab1\lab1>.\Source cipher.txt

Error: Duplicate character in cipher text

C:\Users\sohail\source\repos\lab1\lab1>.\Source cipher.txt

Error: Duplicate character in cipher text

C:\Users\sohail\source\repos\lab1\lab1>_