4 PYTHON LAB

1. Write a Python program to reverse the content of the string.

Do not use built in

```
┌──(kali㉿kali)-[~/nithesh]
└─$ gedit reverse.py

(gedit:111468): GVFS-RemoteVolumeMonitor-WARNING **: 04:23:08.967: remote volume monitor with dbus name org.gtk.vfs.UDisks2VolumeMonitor is not supported

(gedit:111468): tepl-WARNING **: 04:23:09.406: Style scheme 'Kali-Dark' cannot be found, falling back to 'Kali-Dark' default style scheme.

(gedit:111468): tepl-WARNING **: 04:23:09.409: Default style scheme 'Kali-Dark' cannot be found, check your installation.

(gedit:111468): Gtk-WARNING **: 04:23:16.429: Calling org.xfce.Session.Manager.Inhibit failed: GDBus.Error:org.freedesktop.DBus.Error.UnknownMethod: No such method “Inhibit”

┌──(kali㉿kali)-[~/nithesh]
└─$ python reverse.py
olleH
```

2. Create a program that performs basic string compression using the counts of repeated characters. For example, the string “aabccccccaaa” would become “a2b1c5a3”.

```
┌──(kali㉿kali)-[~/nithesh]
└─$ gedit compression.py

(gedit:112454): GVFS-RemoteVolumeMonitor-WARNING **: 04:25:07.882: remote volume monitor with dbus name org.gtk.vfs.UDisks2VolumeMonitor is not supported

(gedit:112454): tepl-WARNING **: 04:25:08.074: Style scheme 'Kali-Dark' cannot be found, falling back to 'Kali-Dark' default style scheme.

(gedit:112454): tepl-WARNING **: 04:25:08.074: Default style scheme 'Kali-Dark' cannot be found, check your installation.

(gedit:112454): Gtk-WARNING **: 04:25:18.087: Calling org.xfce.Session.Manager.Inhibit failed: GDBus.Error:org.freedesktop.DBus.Error.UnknownMethod: No such method “Inhibit”

┌──(kali㉿kali)-[~/nithesh]
└─$ python compression.py
a2b1c5a3
```

3. Get the Caesar cipher from the user Decrypt the cipher

```
┌──(kali㉿kali)-[~/nithesh]
└─$ vi ceasercypher.py

┌──(kali㉿kali)-[~/nithesh]
└─$ python ceasercypher.py
There is a secret message
```

4. Get the cipher encrypted using shift cipher. Identify the key used to encrypt using brute force

ie all the values in the key space

```
┌──(kali㉿kali)-[~/nithesh]
└─$ vi brute.py

┌──(kali㉿kali)-[~/nithesh]
└─$ python brute.py
Ciphertext: KHOOR ZRUOG

Brute force decryption attempts:
Key  0: KHOOR ZRUOG
Key  1: JGNNQ YQTNF
Key  2: IFMMP XPSME
Key  3: HELLO WORLD
Key  4: GDKKN VNQKC
Key  5: FCJJM UMPJB
Key  6: EBIIL TLOIA
Key  7: DAHHK SKNHZ
Key  8: CZGGJ RJMGY
Key  9: BYFFI QILFX
Key 10: AXEEH PHKEW
Key 11: ZWDDG OGJDV
Key 12: YVCCF NFICU
Key 13: XUBBE MEHBT
Key 14: WTAAD LDGAS
Key 15: VSZZC KCFZR
Key 16: URYYB JBEYQ
Key 17: TQXXA IADXP
Key 18: SPWWZ HZCWO
Key 19: ROVVY GYBVN
Key 20: QNUUX FXAUM
Key 21: PMTTW EWZTL
Key 22: OLSSV DVYSK
Key 23: NKRRU CUXRJ
Key 24: MJQQT BTWQI
Key 25: LIPPS ASVPH
```

4 PYTHON LAB

5. Find the k value , Provided cipher text and plain text

```
┌──(kali㉿kali)-[~/nithesh]
└─$ gedit cipher.py

(gedit:122716): GVFS-RemoteVolumeMonitor-WARNING **: 04:47:39.954: remote volume monitor with dbus name org.gtk.vfs.UDisks2VolumeMonitor is not supported

(gedit:122716): tepl-WARNING **: 04:47:40.290: Style scheme 'Kali-Dark' cannot be found, falling back to 'Kali-Dark' default style scheme.

(gedit:122716): tepl-WARNING **: 04:47:40.290: Default style scheme 'Kali-Dark' cannot be found, check your installation.

(gedit:122716): Gtk-WARNING **: 04:47:47.151: Calling org.xfce.Session.Manager.Inhibit failed: GDBus.Error:org.freedesktop.DBus.Error.UnknownMethod: No such method “Inhibit”

┌──(kali㉿kali)-[~/nithesh]
└─$ python cipher.py
Encrypted: KHOOR ZRUOG

Brute force decryption:
Key 0: KHOOR ZRUOG
Key 1: JGNNQ YQTNF
Key 2: IFMMP XPSME
Key 3: HELLO WORLD
Key 4: GDKKN VNQKC
Key 5: FCJJM UMPJB
Key 6: EBIIL TLOIA
Key 7: DAHHK SKNHZ
Key 8: CZGGJ RJMGY
Key 9: BYFFI QILFX
Key 10: AXEEH PHKEW
Key 11: ZWDDG OGJDV
Key 12: YVCCF NFICU
Key 13: XUBBE MEHBT
Key 14: WTAAD LDGAS
Key 15: VSZZC KCFZR
Key 16: URYYB JBEYQ
Key 17: TQXXA IADXP
Key 18: SPWWZ HZCWO
Key 19: ROVVY GYBVN
Key 20: QNUUX FXAUM
Key 21: PMTTW EWZTL
Key 22: OLSSV DVYSK
Key 23: NKRRU CUXRJ
Key 24: MJQQT BTWQI
Key 25: LIPPS ASVPH

Found key: 3
```

6. Encrypt and decrypt the string using Atbash cipher

```
┌──(kali㉿kali)-[~/nithesh]
└─$ vi atbash.py

┌──(kali㉿kali)-[~/nithesh]
└─$ python atbash.py
Plaintext: HELLO WORLD
Encrypted: SVOOL DLIOW
Decrypted: HELLO WORLD
```

7. Encrypt and decrypt using Affine cipher

add validation

```
┌──(kali㉿kali)-[~]
└─$ cd nithesh

┌──(kali㉿kali)-[~/nithesh]
└─$ vi affine.py

┌──(kali㉿kali)-[~/nithesh]
└─$ python affine.py
Plaintext: HELLO WORLD
Encrypted: RCLLA OAPLX
Decrypted: HELLO WORLD
```