Q. A website can have many subdomains and different services are running on them. Write a Python script to check the status of the subdomains which are up or down. The script should automatically check the status every min and should update it in tabular format on the screen. Write a detailed documentation of it.

Ans –

1. List_subdomain.txt is a Text File having a list of subdomains. we will write a Python code to check which subdomains belong to the given Domain & then will check if those subdomains are up or down.

list_subdomain.txt

2. Install requests & tabulate libraries & import them.
   pip install requests -- used to make HTTP requests in Python
   pip install tabulate --used to get the output in Tabular Format.

3. Import Time & socket modules as well to use their functions in the code.

```
import time
import requests
from tabulate  import tabulate
import socket
```

4. Take the Domain name as Input from the User. Then Read all the values from the "list_subdomain" File & keep in the "subd_seprt" variable. & Use the splitlines() function, so it will convert all the strings into one List(at the end of each line the Splitting happens)

```
#Check Subdomains Available for the Input Domain
domain = input("Enter your domain: ")
subd=(open("list_subdomain.txt").read())     #reading Subdomain names from list_subdomain.txt
subd_seprt = subd.splitlines()               #splitlines() converts each string into a list, the spliting is done at each line breaks.
```

5. Check the Valid Subdomains present for the main Domain by using "request.get()" & then use strip() function to get the domain name only(remove "http://").

```
while True:
    for i in subd_seprt:
        urls= f"http://{i}.{domain}"                                    # https://vlearnv.herovired.com/
        try:
            requests.get(urls)
            subdomain=urls.strip("http://")                             # subdomain = "vlearn.herovired.com"
```

6. Use the "socket.gethostbyname(subdomain)" to get the IP Address of each subdomain. & try to connect those IP Addresses with the given port, to check if the IP Address is UP or Down.

   i. with socket.create_connection((ip_address ,port_number),timeout=1)) => use this function to check if the Connection is getting established with the IP & the Port combo then Return/Print all the values of IP, Subdomain & Port & status as UP.

ii. socket.timeout: => if the connection did not establish return as False.

```
#Get IP of Subdomains
def subdomain_status(subdomain):
    port = (80,443)
    ip = socket.gethostbyname(subdomain)

    try:
        for p in port:
            int_p = int(p)
            with socket.create_connection((ip,int_p),timeout=1):        #Check if IP is UP or Down while conneecting with ports.
                return (subdomain, ip,int_p,"UP")

    except socket.timeout:
        return (subdomain, ip,int_p,"Down")
```

7. Store those return values into “all_values”. Then Append into an Empty List “all_values_list” & use the “Tabulate” library to print the returned data(subdomain, ip, port, status) in a Table format. Use “tablefmt="grid" to build the grids of the table.
8. time.sleep(60) = the query will execute in every 60secs/1 min , while http get request is True.

```
    #Append all_values to an Empty List "all_values_list"
    all_values=subdomain_status(subdomain)
    all_values_list = []
    if all_values:
        all_values_list.append(all_values)

    #Print "all_values_list" Values into Table format
    print(tabulate(all_values_list, headers=["Subdomain", "IP Address", "Accessible Ports","Status"],tablefmt="grid"))

except Exception as ex:
    pass
time.sleep(60)              #While True: Run every Minute
```