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Problem Statement 1:

# Write a python code using web scraping method for creating a list of
1) Name of Diseases,
2) URLs associated with diseases and,
3) Icon images of diseases.
Save the list as a CSV file.
Create the folder using python commands to save the icon images.
URL of webpage: https://dermnetnz.org/image-library/

Use selenium libraries
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In [1]:

```
import time
from selenium import webdriver
import pandas as pd
import numpy as np
import warnings
warnings.filterwarnings("ignore")

# variables
URL = 'https://dermnetnz.org/image-library'
DRIVER = './chromedriver'
name_li, url_li, icon_li = [],[],[]


driver = webdriver.Chrome(DRIVER)
driver.get(URL)

time.sleep(5)

extract_names = driver.find_elements_by_css_selector('.imageList__group__item__copy h6')
extract_url = driver.find_elements_by_class_name('imageList__group__item')
preview_images = driver.find_elements_by_css_selector('.imageList__group__item__image img')

for names in extract_names:
    name_li.append(names.text.rstrip('images')) # to get exact name of disease, stripped 'ima

for url in extract_url:
    url_li.append(url.get_attribute('href'))

for images in preview_images:
    icon_li.append(images.get_attribute('src'))

df = pd.DataFrame()
df['disease_name'] = name_li
df['disease_url'] = url_li
df['disease_icon_image'] = icon_li

driver.close()
df.to_csv(r'disease_info.csv', index=False)
display(df)
```

	disease_name	disease_url	disease_icon_image
0	Acne affecting the back	https://dermnetnz.org/topics/acne-affecting-th...	https://dermnetnz.org/assets/manualthumbnails/...
1	Acne affecting the face	https://dermnetnz.org/topics/acne-face-images	https://dermnetnz.org/assets/Uploads/Screen-Sh...
2	Acne and other follicular disorder	https://dermnetnz.org/image-catalogue/acne-and...	https://dermnetnz.org/assets/Uploads/ocular-ro...
3	Acquired dermal macular hyperpigmentation	https://dermnetnz.org/topics/acquired-dermal-m...	https://dermnetnz.org/assets/Uploads/scaly/lp-...
4	Acral lentiginous melanoma	https://dermnetnz.org/topics/acral-lentiginous...	https://dermnetnz.org/assets/Uploads/20160516-...
...	...	...	...
289	Vulval lichen sclerosus	https://dermnetnz.org/topics/vulval-lichen-scl...	https://dermnetnz.org/assets/Uploads/074__Focu...
290	Vulval ulcer	https://dermnetnz.org/topics/vulval-ulcer-images	https://dermnetnz.org/assets/Uploads/vulval-ul...
291	Vulvovaginal candidiasis	https://dermnetnz.org/topics/vulvovaginal-cand...	https://dermnetnz.org/assets/Uploads/candida2-...
292	Xanthelasma	https://dermnetnz.org/topics/xanthelasma-images	https://dermnetnz.org/assets/Uploads/xanthelas...
293	Xeroderma pigmentosum	https://dermnetnz.org/topics/xeroderma-pigment...	https://dermnetnz.org/assets/Uploads/xeroderma...

294 rows × 3 columns

In [2]:
```
# list of 1) Name of Diseases, 2) URLs associated with diseases and, 3) Icon images of diseas

print('Name of DIseases\n',name_li,'\n')
print('URLs associated with diseases\n',url_li,'\n')
print('Icon images of diseases\n',icon_li,'\n')
```

```
Name of DIseases
 ['Acne affecting the back ', 'Acne affecting the face ', 'Acne and other follicular disorder
', 'Acquired dermal macular hyperpigmentation ', 'Acral lentiginous melanoma ', 'Actinic kerat
osis affecting the face ', 'Actinic keratosis affecting the hand ', 'Actinic keratosis affecti
ng the legs and feet ', 'Actinic keratosis affecting the scalp ', 'Actinic keratosis dermoscop
y ', 'Actinic keratosis on the nose ', 'Actinic keratosis treated with imiquimod ', 'Adalimuma
b ', 'Alopecia areata ', 'Amelanotic melanoma ', 'Anal cancer ', 'Angiofibromas ', 'Angiokerat
omas ', 'Angular cheilitis ', 'Arthropod bites ', 'Atopic dermatitis ', 'Atopic eczema ', 'Ato
pic flexural eczema ', 'Atypical melanocytic naevu', 'Atypical mycobacterial infection ', 'Aty
pical naevus ', 'Autoimmune alopecia ', 'B-K mole ', 'BCC affecting the ear ', 'BCC affecting
the eyelid ', 'BCC affecting the face ', 'BCC affecting the nose ', 'BCC affecting the trunk
', 'Bacteria ', 'Bacterial skin infection ', 'Balanitis ', 'Basal cell carcinoma affecting the
ear ', 'Basal cell carcinoma affecting the eyelid ', 'Basal cell carcinoma affecting the face
', 'Basal cell carcinoma affecting the nose ', 'Basal cell carcinoma affecting the trunk ', 'B
asal cell epithelioma affecting the ear ', 'Basal cell epithelioma affecting the eyelid ', 'Ba
sal cell epithelioma affecting the face ', 'Basal cell epithelioma affecting the nose ', 'Basa
l cell epithelioma affecting the trunk ', 'Basalioma affecting the ear ', 'Basalioma affecting
the eyelid ', 'Basalioma affecting the face ', 'Basalioma affecting the nose ', 'Basalioma aff
ecting the trunk ', 'Behcet disease ', 'Besnier prurigo ', 'Bowenoid papulosis ', 'Bullous pem
```

In [4]:
```
import urllib.request
import os

# creating folder using os library
os.makedirs('images', exist_ok = True)

opener=urllib.request.build_opener()
opener.addheaders=[('User-Agent','Mozilla/5.0 (Windows NT 6.1; WOW64) AppleWebKit/537.36 (KHT
urllib.request.install_opener(opener)

for y in range(len(df)):
    try:
        urllib.request.urlretrieve(df['disease_icon_image'][y],r'images/'+df['disease_name'][
    except:
        print(df['disease_name'][y])

print('Saved icons in "images" folder')
```

In [ ]:
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Problem Statement 2:

Complete the python function to get the output of below cases :

i) case 1: n = 1, v = 1
ii) case 2: n= 2, v = 23 (Note: 23 is derived as 1 + 22)
iii) case 3: n= 3, v = 356 (Note: 356 is derived as 1+22+333)
iv) case 4: n= 4, v = 4800 (Note: 4800 is derived as 1+22+333+4444)

def mystery(n):

...
...
...

return v
```

In [6]:

```
def mystery(n):
    l1 = []
    for i in range(1,n+1):
        l1.append(int(i*str(i)))
    v = sum(l1)
    return v

print(mystery(1))
print(mystery(2))
print(mystery(3))
print(mystery(4))

n = int(input('Enter your choice of number : '))
print(mystery(n))
```

```
1
23
356
4800
Enter your choice of number : 5
60355
```