ProJet Python: Web Scraping

Auteur Du Projet :

Papa Samba Dia
Mor Diouf

Professeur: Mr Bousso

Projet Scraping :

presentateur :

Papa Samba Dia
Mor Diouf

Objectif Du Projet:

Ce projet intitule **Jumia_Bot** a pour objectif de scraper le site commerciale (https://www.jumia.sn) pour recuperer tous les informations en rapport avec les produits (Telephones et Tablettes) vendus sur jumia.

Jumia est une entreprise de commerce en ligne présente sur le marché africain et fondée en 2012. La plateforme de Jumia est un marché en ligne qui met en relation des vendeurs et des acheteurs, en mettant à leur disposition un service logistique, permettant l'expédition et la livraison des colis en plus d'un service de paiement.

Information cible:

Titre et caracteristique
marque
Prix
Image
Lien du Produit
Prix de livraison
Note
Lieu de Livraison.

Requirements

beautifulsoup4 - requests - pandas

In [11]:

```python
import requests
from bs4 import BeautifulSoup

#La fonction get_product_title Title qui retourne le titre du produit (telephone ou Tablette)
def get_product_title(soup):
    return soup.find('h1',{'class':'-fs20 -pts -pbxs'}).get_text()


#La fonction get_product_price qui retourne le prix du produit (telephone ou Tablette)
def get_product_price(soup):
    soup=soup.find('span',{'class':'-b -ltr -tal -fs24'}).get_text()
    return soup[:-1]


#La fonction get_product_mark qui retourne la marque du produit (telephone ou Tablette)
```

```python
def get_product_mark(soup):
    s=soup.find('div',{'class':'-phs'})
    return soup.findAll('div',{'class':'-pvxs'})


#La fonction get_price_delivery qui retourne le prix de livraison du produit
(telephone ou Tablette)
def get_price_delivery(soup):
    return soup.find('div',{'class':'markup -fs12 -pbm'}).get_text()


#La fonction get_numbers_star qui retourne la note recus par le produit (telephone
ou Tablette)
def get_numbers_star(soup):
    return soup.find('div',{'class':'stars _s _al'}).get_text()


#La fonction get_delivery_to qui retourne le lieu de livraison du produit
(telephone ou Tablette)
def get_delivery_to(soup):
    return soup.find('div',{'class':'markup -fs12 -pbm'}).get_text()


#La fonction get_link_picture qui retourne le lien de l'image du produit (telephone
ou Tablette)
def get_link_picture(soup):
    s=soup.find('div',{'id':'imgs'})
    s=s.find('a')
    return s['href']


#La fonction get_product_data qui retourne tous les caracteristique du produit sous
Forme de dictionnaire (telephone ou Tablette)
def get_product_data(product_url):
    r=requests.get(product_url)
#verifions le status code si c'est egale a 200
    if r.status_code==200:
            #print(r.content)
        soup=BeautifulSoup(r.content, 'html.parser')
#On fait appel aux autres fonctions contenant les informations
        title=get_product_title(soup)
        price=get_product_price(soup).split()
        marque=get_product_mark(soup)[1].get_text().split()
        prix_de_delivrance=get_price_delivery(soup).split()
        note=get_numbers_star(soup).split()
        delivrer=get_delivery_to(soup).split()
        picture=get_link_picture(soup)
#On retourne une dictionnaire contenant tout les informations.
    return { 'Title and feature': title,
            'Price (fcfa)':''.join(price[:-1]),
            'Marque': marque[1],
            'Delivery price': ' '.join(prix_de_delivrance[5:7]),
            'Rating':''.join(note[0]+'/'+note[3]),
            'Delivery to':delivrer[-1],
            'Picture':picture
            }


#La fonction get_link qui retourne tout les liens concernant les pages a scraper.
def get_link(soup):
    links=[]
    all_link_tags=soup.findAll('article',{'class':'prd _fb col c-prd'})
    for td in all_link_tags:
        a=td.find('a')
```

```
            link=a['href']
            links.append('https://www.jumia.sn'+link)
    #On retourne une liste contenant tous les liens.
    return links


#Définissons une fonction générique write_csv qui prend une liste de dictionnaires
et l'écrit dans
#un fichier au format CSV. Nous inclurons également les en-têtes de colonne dans la
première ligne.
def write_csv(items, path):
    # Ouvrir le fichier en mode écriture
    with open(path, 'w') as f:
        # Retourner s'il n'y a rien à écrire
        if len(items) == 0:
            return

        # Écrivez les en-têtes sur la première ligne
        headers = list(items[0].keys())
        f.write(','.join(headers) + '\n')

        # Écrire un article par ligne
        for item in items:
            values = []
            for header in headers:
                values.append(str(item.get(header, "")))
            f.write(','.join(values) + "\n")
```

Le Scraping se fait en 2 etapes:
1er etape: On doit scraper les 12 pages ([https://www.jumia.sn/smartphones-android/?
sort=popularity&page=({1,2...12})#catalog-listing](https://www.jumia.sn/smartphones-android/?sort=popularity&page=({1,2...12})#catalog-listing) pour reccuperer les liens de chaque appareil.

In [12]:

```
t=[]
link=[]

for i in range(1,14):
    r=requests.get('https://www.jumia.sn/smartphones-android/?sort=popularity&page='
+str(i)+'#catalog-listing')
    soup=BeautifulSoup(r.content, 'html.parser')
    t.append(get_link(soup))

for i in range(0,len(t)-1):
    for j in range(0,len(t[i])-1):
        link.append(t[i][j])
```

In [ ]:

```
#link va nous donner la liste des liens d'appareils disponibles dans www.jumia.sn
link
```

2em etape: Apres avoir Obtenue les liens de chaques appareils nous allons proceder a la recuperation
d'informations grace aux fonctions ladite cree. Nous allons faire appel a la fonction *get_product_data()*.

In [59]:

```
#prenons 100 liens et testons notre code.
informations=[]
for i in range(0,100):
    informations.append(get_product_data(link[i]))
    informations[i]['Link']=link[i]
```

```
In [ ]:
```

```
#informations, nous donne les informations de chaque appareil present dans
www.jumia.sn
informations
```

```
In [61]:
```

```
#write_csv qui permet de creer un fichier csv a partir d'une liste de dictionnaire
write_csv(informations,'info_csv.txt')
```

```
In [ ]:
```

```
#ouvrons le contenue du fichier 'info_csv.txt'
with open('info_csv.txt', 'r') as f:
    print(f.read())
```

```
In [63]:
```

```
import pandas as pd
```

```
In [64]:
```

```
#creons un dataframe a partir du fichier csv 'info_csv.txt' en eliminant toute les
lignes comportant des erreurs .
data=pd.read_csv('info_csv.txt',sep=',',error_bad_lines=None,warn_bad_lines=False)
pd.set_option('mode.chained_assignment', None)
#r:le nombre de ligne du dataframe
r=data.shape[0]
```

```
In [65]:
```

```
#Parcourons la colonne 'price' de notre dataframe en corrigeant certaine erreurs
for i in range(0,r-1):
    try:
        data['Price (fcfa)'][i]=int(data['Price (fcfa)'][i])
    except ValueError as e:
        s=data['Price (fcfa)'][i].split('-')
        data['Price (fcfa)'][i]=s[1]
        data['Price (fcfa)'][i]=float(data['Price (fcfa)'][i])

#Convertir la colonne Price en float
data['Price (fcfa)']=data['Price (fcfa)'].astype(int)
```

```
In [66]:
```

```
#Pour afficher tous les colonnes de notre dataframe
pd.set_option('display.max_columns', None)
pd.set_option('display.max_rows', None)
```

```
In [67]:
```

```
data
```

Out[67]:

	Title and feature	Price (fcfa)	Marque	Delivery price	Rating	Delivery to	Picture	
0	Samsung Galaxy A12 - 4G - 6.5" - RAM 4Go -	78900	Samsung	550 FCFA	4.4/5	Medina	https://sn.jumia.is/unsafe/fit-in/680x680/filt...	https://www.jumia.sn/s... galaxy-a12

	ROM... Title and feature	Price (fcfa)	Marque	Delivery price	Rating	Delivery to	Picture	
1	Samsung Galaxy A12 - 4G - 6.5" - RAM 4Go - ROM...	78900	Samsung	550 FCFA	4.2/5	Medina	https://sn.jumia.is/unsafe/fit-in/680x680/filt...	https://www.jumia.sn/s galaxy-a12
2	Tecno Camon 17 - Ecran 6.55" - ROM 128Go - RA...	93000	Tecno	550 FCFA	4.1/5	Medina	https://sn.jumia.is/unsafe/fit-in/680x680/filt...	https://www.jumia.s camon-17-ecra
3	Tecno Camon 17 - 6.6" - 128Go - RAM 6Go - Ultra...	101000	Tecno	550 FCFA	4.2/5	Medina	https://sn.jumia.is/unsafe/fit-in/680x680/filt...	https://www.jumia.s camon-17-6.6-
4	Tecno POP 2F - 5.5'' - Double SIM - ROM 16 Go ...	35500	Tecno	550 FCFA	4.8/5	Medina	https://sn.jumia.is/unsafe/fit-in/680x680/filt...	https://www.jumia.s pop-2f-5.5-dc
5	Tecno Spark 7 - 6.5" - ROM 64Go - RAM 3Go - Ca...	71900	Tecno	550 FCFA	4.2/5	Medina	https://sn.jumia.is/unsafe/fit-in/680x680/filt...	https://www.jumia.s spark-7-6.5-rc
6	Tecno Spark 8 - 6.52" - ROM 64Go - RAM 2Go - C...	68000	Tecno	550 FCFA	4.8/5	Medina	https://sn.jumia.is/unsafe/fit-in/680x680/filt...	https://www.jumia.s spark-8-6.52-
7	Tecno Camon 17 - 6.55" - ROM 128Go - RAM 4Go - ...	93000	Tecno	550 FCFA	4.2/5	Medina	https://sn.jumia.is/unsafe/fit-in/680x680/filt...	https://www.jumia.s camon-17-6.55
8	Tecno Pouvoir 4 - 4G LTE - 2 SIM - 8/13 Mpx - ...	62900	Tecno	550 FCFA	4.7/5	Medina	https://sn.jumia.is/unsafe/fit-in/680x680/filt...	https://www.jumia.s pouvoir-4-4g
9	Tecno SPARK Go - 6.52" - ROM 32GB - RAM 2GB -...	51900	Tecno	550 FCFA	4.3/5	Medina	https://sn.jumia.is/unsafe/fit-in/680x680/filt...	https://www.jumia.s spark-go-6.52
10	Samsung Galaxy A32 - ROM 128Go - RAM 6Go - 64+...	139900	Samsung	550 FCFA	4.8/5	Medina	https://sn.jumia.is/unsafe/fit-in/680x680/filt...	https://www.jumia.sn/s galaxy-a32-
	Tecno Spark 7 -							

	Title and feature	Price (fcfa)	Marque	Delivery price	Rating	Delivery to	Picture	
11	6.5" - ROM 64 Go - RAM 3Go Ca...	69500	Tecno	550 FCFA	3.9/5	Medina	https://sn.jumia.is/unsafe/fit-in/680x680/filt...	https://www.jumia.sn/spark-7-6.5-ro...
12	Tecno F1 - Ecran 5" - ROM 8 Go - 1 Go RAM - Ca...	29900	Tecno	550 FCFA	3.8/5	Medina	https://sn.jumia.is/unsafe/fit-in/680x680/filt...	https://www.jumia.sn/t ecran-5-ro...
13	Tecno Spark 5 Pro- 6.6" - ROM 64Go - RAM 3Go -...	68000	Tecno	550 FCFA	4.2/5	Medina	https://sn.jumia.is/unsafe/fit-in/680x680/filt...	https://www.jumia.s spark-5-pro-6
14	Tecno Camon 15 - 6.6" - ROM 64Go - RAM 4Go - C...	74900	Tecno	550 FCFA	4.2/5	Medina	https://sn.jumia.is/unsafe/fit-in/680x680/filt...	https://www.jumia.s camon-15-6.6-
15	Tecno SPARK Go - 6.52" - ROM 32GB - RAM 2GB -...	51900	Tecno	550 FCFA	4.1/5	Medina	https://sn.jumia.is/unsafe/fit-in/680x680/filt...	https://www.jumia.s spark-go-6.52
16	Tecno POP 2F - 5.5'' - Double SIM - ROM 16 Go ...	35500	Tecno	550 FCFA	3.9/5	Medina	https://sn.jumia.is/unsafe/fit-in/680x680/filt...	https://www.jumia.s pop-2f-5.5-d
17	Invens H3 - Ecran 5" - Double SIM - 3G - ROM 1...	24500	Invens	550 FCFA	3.3/5	Medina	https://sn.jumia.is/unsafe/fit-in/680x680/filt...	https://www.jumia.sn h3-ecran-5-d
18	Calus C12SE - Ecran 5.5" - RAM 1Go - ROM 8Go -...	19900	Calus	550 FCFA	4/5	Medina	https://sn.jumia.is/unsafe/fit-in/680x680/filt...	https://www.jumia.s c12se-ecran-5
19	Tecno Pop 5 P – Écran 6.1″ – ROM 32GB – RAM 2G...	51900	Tecno	550 FCFA	3.8/5	Medina	https://sn.jumia.is/unsafe/fit-in/680x680/filt...	https://www.jumia.s pop-5-p-ecra
20	Tecno Pop 5 P – Écran 6.52″ – ROM 32GB – RAM 2...	51900	Tecno	550 FCFA	4.6/5	Medina	https://sn.jumia.is/unsafe/fit-in/680x680/filt...	https://www.jumia.s pop-5-p-ecra
21	Tecno POP 3 - Ecran 5.7'' - Double SIM - ROM 1...	42900	Tecno	550 FCFA	3.6/5	Medina	https://sn.jumia.is/unsafe/fit-in/680x680/filt...	https://www.jumia.s pop-3-ecran-5
	Invens H4 - Ecran							

	Title and Feature	Price (fcfa)	Marque	Delivery price	Rating	Delivery to	Picture	
22	Ecran 5.9" and Double SIM - ROM 16GB...	29900	Marque	550 FCFA	2/5	Medina	https://sn.jumia.is/unsafe/fit-in/680x680/filt...	https://www.jumia.sn/h4-ecran-5.0
23	Samsung Galaxy A03S - 4G - 6.5" - RAM 3Go - RO...	68400	Samsung	550 FCFA	4.3/5	Medina	https://sn.jumia.is/unsafe/fit-in/680x680/filt...	https://www.jumia.sn/sa galaxy-a03
24	Calus Zero 30 Max - Ecran 5.5" - RAM 1Go - ROM...	20900	Calus	550 FCFA	4/5	Medina	https://sn.jumia.is/unsafe/fit-in/680x680/filt...	https://www.jumia.s zero-30-max-e
25	Infinix HOT 10 4G - Ecran 6.78"- ROM 64Go - R...	74900	Infinix	550 FCFA	0/5	Medina	https://sn.jumia.is/unsafe/fit-in/680x680/filt...	https://www.jumia.s hot-10-4g-e
26	AIRPHA MEGA 3– 5.5 Pouces – Dual Sim – 1Go Ram...	27900	AIRPHA	550 FCFA	3.8/5	Medina	https://sn.jumia.is/unsafe/fit-in/680x680/filt...	https://www.jumia.s mega-3-5.5-p
27	Calus Note 40 Ultra - Ecran 6.26" - RAM 2Go - ...	21900	Calus	550 FCFA	5/5	Medina	https://sn.jumia.is/unsafe/fit-in/680x680/filt...	https://www.jumia.s note-40-ultra
28	Tecno Spark 7 - 6.5" - Caméra 16MP / 8MP - 50...	59400	Tecno	550 FCFA	0/5	Medina	https://sn.jumia.is/unsafe/fit-in/680x680/filt...	https://www.jumia.s spark-7-6.5-ca
29	Samsung Galaxy A12 - 4G - 6.5" - RAM 4Go - ROM...	89900	Samsung	550 FCFA	0/5	Medina	https://sn.jumia.is/unsafe/fit-in/680x680/filt...	https://www.jumia.sn/sa galaxy-a12
30	Doogee BL5500 Lite - Ecran 6.19" - RAM 2Go - R...	39900	Doogee	550 FCFA	4.6/5	Medina	https://sn.jumia.is/unsafe/fit-in/680x680/filt...	https://www.jumia.s lite-4g-ecra
31	Oking Mate 21 Pro -RAM 2Go ROM - 16Go Dual SIM	27000	Oking	550 FCFA	3.5/5	Medina	https://sn.jumia.is/unsafe/fit-in/680x680/filt...	https://www.ecoma.s mate-21-pro-ra
32	Alcatel 1 SE - 32GB Rom + 2 GB Ram - 6.22" - 4...	51900	Alcatel	550 FCFA	4/5	Medina	https://sn.jumia.is/unsafe/fit-in/680x680/filt...	https://www.jumia.sn/a se-32gb-r
	Tecno Pop							

	Title and feature	Price (fcfa)	Marque	Delivery price	Rating	Delivery Medina	Picture	https://www.jumia.s...
33	5 - Écran 6.1" - ROM 32GB – RAM 2GB ...	49950	Tecno	550 FCFA	5/5	Medina	https://sn.jumia.is/unsafe/fit-in/680x680/filt...	https://www.jumia.s... pop-5-ecran-6...
34	Oking Mate 30 PRO - Ecran 6.52" Ips - ROM 16Go...	29500	Oking	550 FCFA	1/5	Medina	https://sn.jumia.is/unsafe/fit-in/680x680/filt...	https://www.jumia.s... mate-30-pro-e...
35	Oking Mate 30 PRO - Ecran 6.52" Ips - ROM 16Go...	30500	Oking	550 FCFA	2/5	Medina	https://sn.jumia.is/unsafe/fit-in/680x680/filt...	https://www.jumia.sn/... pro-ecran-...
36	Samsung Galaxy A03S - 4G - 6.5" - RAM 3Go - RO...	71000	Samsung	550 FCFA	0/5	Medina	https://sn.jumia.is/unsafe/fit-in/680x680/filt...	https://www.jumia.sn/s... galaxy-a03...
37	Samsung Galaxy A03S - 4G - 6.5" - RAM 3Go - RO...	71000	Samsung	550 FCFA	0/5	Medina	https://sn.jumia.is/unsafe/fit-in/680x680/filt...	https://www.jumia.sn/s... galaxy-a03...
38	Calus Max 30 XS Max - Ecran 6.6" - RAM 1 Go - ...	23500	Calus	550 FCFA	3.4/5	Medina	https://sn.jumia.is/unsafe/fit-in/680x680/filt...	https://www.jumia.s... max-30-xs-max...
39	Tecno POP 3 - Ecran 5.7'' - Double SIM - ROM 1...	42900	Tecno	550 FCFA	4/5	Medina	https://sn.jumia.is/unsafe/fit-in/680x680/filt...	https://www.jumia.s... pop-3-ecran-5...
40	Invens H3 - Ecran 5" - Double SIM - 3G - ROM 1...	24900	Invens	550 FCFA	3.1/5	Medina	https://sn.jumia.is/unsafe/fit-in/680x680/filt...	https://www.jumia.s... h3-ecran-5-c...
41	Calus Reno 3 - Ecran 5.5" - RAM 1Go - ROM 8 Go...	20900	Calus	550 FCFA	0/5	Medina	https://sn.jumia.is/unsafe/fit-in/680x680/filt...	https://www.jumia.s... reno-3-ecran...
42	Tecno Pop 5P - Ecran 6.1" - ROM 32Go - RAM 2G...	65000	Tecno	550 FCFA	4.5/5	Medina	https://sn.jumia.is/unsafe/fit-in/680x680/filt...	https://www.jumia.s... pop-5p-ecran...
43	Samsung Galaxy A12 - 6.5" - RAM 4Go - ROM 64 G...	88000	Samsung	550 FCFA	4.5/5	Medina	https://sn.jumia.is/unsafe/fit-in/680x680/filt...	https://www.jumia.sn/s... galaxy-a12...

	Calus Title and feature	Price (fcfa)	Marque	Delivery price	Rating	Delivery to	Picture https://sn.jumia.is/unsafe/fit-in/680x680/filt...	https://www.jumia.s
44	Smart V30 - Ecran 5.5" - RAM 1Go - ROM 8...	20900	Calus	550 FCFA	0/5	Medina	https://sn.jumia.is/unsafe/fit-in/680x680/filt...	smart-v30-ec
45	Tecno Spark 7P - 6.8" - ROM 64Go - RAM 4Go - C...	73900	Tecno	550 FCFA	0/5	Medina	https://sn.jumia.is/unsafe/fit-in/680x680/filt...	spark-7p-6.8-i
46	Samsung Galaxy A12 – Ecran 6.5″ - ROM 64GB - ...	84800	Samsung	550 FCFA	5/5	Medina	https://sn.jumia.is/unsafe/fit-in/680x680/filt...	https://www.jumia.sn/s galaxy-a12-
47	MOMOFLY HOT 7 Air - Ecran 6" - RAM 1Go - ROM 8...	21500	MOMOFLY	550 FCFA	0/5	Medina	https://sn.jumia.is/unsafe/fit-in/680x680/filt...	https://www.jumia.sn/r hot-7-air-e
48	Tecno Spark 7 - Ecran 6.5" - Caméra 16MP / 8M...	61800	Tecno	550 FCFA	0/5	Medina	https://sn.jumia.is/unsafe/fit-in/680x680/filt...	https://www.jumia.s spark-7-ecra
49	Samsung Galaxy A02 - 4G - 6.5" - RAM 2Go - ROM...	62000	Samsung	550 FCFA	0/5	Medina	https://sn.jumia.is/unsafe/fit-in/680x680/filt...	https://www.jumia.sn/s galaxy-a02-
50	XIAOMI Redmi Note 8 2021 - 6.3" - 4G - 4Go Ram...	105000	XIAOMI	550 FCFA	0/5	Medina	https://sn.jumia.is/unsafe/fit-in/680x680/filt...	https://www.jumia.sn redmi-note-8
51	AIRPHA MEGA 3 – Ecran 5.5" – Dual Sim – 1Go Ra...	27900	AIRPHA	550 FCFA	3.2/5	Medina	https://sn.jumia.is/unsafe/fit-in/680x680/filt...	https://www.jumia.sn mega-3-ecra
52	Samsung Galaxy A32 - ROM 128Go - RAM 6Go - 64+...	154900	Samsung	550 FCFA	0/5	Medina	https://sn.jumia.is/unsafe/fit-in/680x680/filt...	https://www.jumia.sn/s galaxy-a32-
53	Tecno Spark 7P - 6.8" - ROM 64Go - RAM 4Go - C...	73900	Tecno	550 FCFA	0/5	Medina	https://sn.jumia.is/unsafe/fit-in/680x680/filt...	https://www.jumia.s spark-7p-6.8-i
54	Tecno Spark 5 Pro - 6.6" - ROM 64Go - RAM 3Go ...	68900	Tecno	550 FCFA	4/5	Medina	https://sn.jumia.is/unsafe/fit-in/680x680/filt...	https://www.jumia.s spark-5-pro-6

	Title and feature	Price (fcfa)	Marque	Delivery price	Rating	Delivery to	Picture	
	Samsung Galaxy A20e		Samsung	550	0/5	Medina	https://sn.jumia.is/unsafe/fit-in/680x680/filt...	https://www.jumia.sn/...galaxy-a20e
55	Ecran 5.8" - ROM 32Go - ...	89900		FCFA				
56	Oking Mate 21 Pro -RAM 2Go ROM -16Go Dual SIM	28500	Oking	550 FCFA	0/5	Medina	https://sn.jumia.is/unsafe/fit-in/680x680/filt...	https://www.jumia.s...mate-21-pro-ra
57	TCL 20SE - 128 GB + 4 GB - 6.82" - Quadruple Ca...	100000	TCL	550 FCFA	4.5/5	Medina	https://sn.jumia.is/unsafe/fit-in/680x680/filt...	https://www.jumia.sn/...128-gb-4-g
58	Tecno Camon 17 - Ecran 6.55" - ROM 128Go - RAM...	99000	Tecno	550 FCFA	0/5	Medina	https://sn.jumia.is/unsafe/fit-in/680x680/filt...	https://www.jumia.s...camon-17-ecra
59	Samsung Galaxy A12 – Ecran 6.5″ - ROM 64GB - ...	87000	Samsung	550 FCFA	0/5	Medina	https://sn.jumia.is/unsafe/fit-in/680x680/filt...	https://www.jumia.s...galaxy-a12
60	Generic Montre unisex Digital - bracelet métal...	2700	Generic	550 FCFA	3.4/5	Medina	https://sn.jumia.is/unsafe/fit-in/680x680/filt...	https://www.jumia.sn/...montre-unis
61	Invens H4 - Ecran 5.0" - Double SIM - ROM 16GB...	28500	Invens	550 FCFA	1/5	Medina	https://sn.jumia.is/unsafe/fit-in/680x680/filt...	https://www.jumia.s...h4-ecran-5.0
62	Mione Q10 - Ecran 5.5" - RAM 2Go - ROM 8Go - C...	22900	Mione	550 FCFA	0/5	Medina	https://sn.jumia.is/unsafe/fit-in/680x680/filt...	https://www.jumia.s...q10-ecran-5.5
63	Oking Mate 21 PRO - Ecran 6.1" - ROM 16Go Ram ...	27500	Oking	550 FCFA	3/5	Medina	https://sn.jumia.is/unsafe/fit-in/680x680/filt...	https://www.jumia.s...mate-21-pro-e
64	Samsung Galaxy A12 - 6.5" - RAM 4Go - ROM 64 G...	89000	Samsung	550 FCFA	0/5	Medina	https://sn.jumia.is/unsafe/fit-in/680x680/filt...	https://www.jumia.sn/...galaxy-a12
65	Oking Mate 21 PRO - Ecran 6.1" Ips - ROM	27500	Oking	550 FCFA	4/5	Medina	https://sn.jumia.is/unsafe/fit-in/680x680/filt...	https://www.jumia.s...mate-21-pro-e

	Title and feature	Price (fcfa)	Marque	Delivery price	Rating	Delivery to	Picture	
66	Oking Mate 30 PRO - Ecran 6.52" Ips - ROM 16Go...	29500	Oking	550 FCFA	0/5	Medina	https://sn.jumia.is/unsafe/fit-in/680x680/filt...	https://www.jumia.s mate-30-pro-e
67	Infinix HOT 10 4G - Ecran 6.7"- ROM 64Go - RA...	95000	Infinix	550 FCFA	4.7/5	Medina	https://sn.jumia.is/unsafe/fit-in/680x680/filt...	https://www.jumia.s hot-10-4g-e
68	TCL 20SE - 128 GB + 4 GB - 6.82" - Quadruple Ca...	100000	TCL	550 FCFA	0/5	Medina	https://sn.jumia.is/unsafe/fit-in/680x680/filt...	https://www.jumia.sn/ 128-gb-4-g
69	TCL 20Y - 64GB Rom + 4GB Ram - 6.52" - Triple ...	80000	TCL	550 FCFA	0/5	Medina	https://sn.jumia.is/unsafe/fit-in/680x680/filt...	https://www.jumia.sn 64gb-rom-4g
70	XIAOMI Redmi Note 10S - 2 SIM - 6 Go RAM - 128...	169000	XIAOMI	550 FCFA	0/5	Medina	https://sn.jumia.is/unsafe/fit-in/680x680/filt...	https://www.jumia.sn redmi-note-1
71	Alcatel 1SE - 32GB Rom + 2 GB Ram - 6.22" - 40...	51900	Alcatel	550 FCFA	4.5/5	Medina	https://sn.jumia.is/unsafe/fit-in/680x680/filt...	https://www.jumia.sn 1se-32gb-ron
72	Samsung Galaxy A02 - 4G - 6.5" - RAM 2Go - ROM...	62000	Samsung	550 FCFA	0/5	Medina	https://sn.jumia.is/unsafe/fit-in/680x680/filt...	https://www.jumia.sn/s galaxy-a02
73	Redmi Note 10 Pro Max – Ecran 6.67″ - ROM 128G...	178000	Redmi	550 FCFA	4/5	Medina	https://sn.jumia.is/unsafe/fit-in/680x680/filt...	https://www.jumia.s note-10-pro-m
74	Nokia 6.1 Plus- 5.8 "-6GB- 64GB - Android Smartp...	82955	Nokia	550 FCFA	3.4/5	Medina	https://sn.jumia.is/unsafe/fit-in/680x680/filt...	https://www.jumia.s 6.1-plus-5.8-
75	Samsung Galaxy A03s - RAM 3 Go - ROM 32 Go - ...	74000	Samsung	550 FCFA	0/5	Medina	https://sn.jumia.is/unsafe/fit-in/680x680/filt...	https://www.jumia.sn/s galaxy-a03s
	Tecno							

	Title and feature	Price (fcfa)	Marque	Delivery price	Rating	Delivery to	Picture	
76	Spark 8 6.52" ROM 64Go - RAM 2Go - C...	68000	Tecno	550 FCFA	0/5	Medina	https://sn.jumia.is/unsafe/fit-in/680x680/filt...	https://www.jumia.s... spark-8-6.52-...
77	Oking Mate 30PRO - Ecran 6.52" Ips - ROM 16Go ...	30900	Oking	550 FCFA	0/5	Medina	https://sn.jumia.is/unsafe/fit-in/680x680/filt...	https://www.jumia.s... mate-30pro-e...
78	Samsung Galaxy A03S - 4G - 6.5" - RAM 3Go - RO...	75900	Samsung	550 FCFA	3.5/5	Medina	https://sn.jumia.is/unsafe/fit-in/680x680/filt...	https://www.jumia.sn/s... galaxy-a03...
79	Tecno Camon 17 - Ecran 6.6" - ROM 128GB - RAM ...	111000	Tecno	550 FCFA	0/5	Medina	https://sn.jumia.is/unsafe/fit-in/680x680/filt...	https://www.jumia.s... camon-17-ecr...
80	Tecno Pop 5 – Écran 6.1″ – ROM 16GB – RAM 1GB ...	61000	Tecno	550 FCFA	2/5	Medina	https://sn.jumia.is/unsafe/fit-in/680x680/filt...	https://www.jumia.s... pop-5-ecran-6...
81	Invens Max15 – Mémoire 16 Go – RAM 2 Go – Phot...	33000	Invens	550 FCFA	5/5	Medina	https://sn.jumia.is/unsafe/fit-in/680x680/filt...	https://www.jumia.sn... max15-memoir...
82	Huawei Y9 2019 - 6.5" - ROM 64Go - RAM 4Go - ...	145000	Huawei	550 FCFA	0/5	Medina	https://sn.jumia.is/unsafe/fit-in/680x680/filt...	https://www.jumia.sn... y9-2019-6.5-...
83	Mione A80 - Ecran 6.8" - RAM 2Go - ROM 32Go - ...	49900	Mione	550 FCFA	0/5	Medina	https://sn.jumia.is/unsafe/fit-in/680x680/filt...	https://www.jumia.s... a80-ecran-6.8...
84	Oking Mate 21 PRO - Ecran 6.1" - ROM 16Go Ram ...	27000	Oking	550 FCFA	0/5	Medina	https://sn.jumia.is/unsafe/fit-in/680x680/filt...	https://www.jumia.s... mate-21-pro-e...
85	XIAOMI Redmi Note 10S - 2 SIM - 6 Go RAM - 128...	165000	XIAOMI	550 FCFA	0/5	Medina	https://sn.jumia.is/unsafe/fit-in/680x680/filt...	https://www.jumia.sn... redmi-note-1...
86	Oking Mate 30PRO - Ecran 6.52" Ips -	29000	Oking	550 FCFA	0/5	Medina	https://sn.jumia.is/unsafe/fit-in/680x680/filt...	https://www.jumia.s... mate-30pro-e...

	Title and feature	Price (fcfa)	Marque	Delivery price	Rating	Delivery to	Picture	
87	Itel It A16 Plus - Ecran 5.0"- Dual Sim - RAM ...	28000	Itel	550 FCFA	0/5	Medina	https://sn.jumia.is/unsafe/fit-in/680x680/filt...	https://www.jumia.s a16-plus-e
88	Tecno Camon 15 Premier Ecran 6.6"- Ram 6 - ROM...	146000	Tecno	550 FCFA	0/5	Medina	https://sn.jumia.is/unsafe/fit-in/680x680/filt...	https://www.jumia.s camon-15-prer

In [70]:

```
#Renvoie l'indice Du Maximum
data['Price (fcfa)'].argmax()
```

Out[70]:

73

In [72]:

```
#Renvoie la ligne du maximum
s=data.loc[data['Price (fcfa)'].argmax()]
s
```

Out[72]:

```
Title and feature    Redmi Note 10 Pro Max – Ecran 6.67" - ROM 128G...
Price (fcfa)                                                    178000
Marque                                                           Redmi
Delivery price                                               550 FCFA
Rating                                                             4/5
Delivery to                                                     Medina
Picture              https://sn.jumia.is/unsafe/fit-in/680x680/filt...
Link                 https://www.jumia.sn/redmi-note-10-pro-max-ecr...
Name: 73, dtype: object
```

In [73]:

```
print(s['Picture'])
```

```
https://sn.jumia.is/unsafe/fit-
in/680x680/filters:fill(white)/product/74/09429/1.jpg?8064
```

In [74]:

```
print(s['Link'])
```

```
https://www.jumia.sn/redmi-note-10-pro-max-ecran-6.67-rom-128gb-ram-6gb-camera-
108mp-darknight-9249047.html
```

In [ ]: