Cours de Manipulation des données avec Python .

Réalisé par Ketsia MULAPI TITA

TP pour la récupération des données sur internet : PREMIERE PARTIE

```python
VOTRE_NOM_ICI ="Yann Fournier"
print(VOTRE_NOM_ICI)

Yann Fournier
```

TRAVAIL PRATIQUE

Dans un notebook propre à vous, répondez à chacune des parties suivantes :

Partie 1 : HTML

```html
<!-- Vous allez construire un fichier HTML de votre choix, objectif ?
construire une page web static (pas de javascript, juste HTML) -->

<html>

<head>

</head>

<body>
    <h1>Titre de la page</h1>
    <h3>What is Lorem Ipsum?</h3>
    <p>
        Lorem Ipsum is simply dummy text of the printing and
typesetting industry. Lorem Ipsum has been the industry's
        standard dummy text ever since the 1500s, when an unknown
printer took a galley of type and scrambled it to make
        a type specimen book. It has survived not only five centuries,
but also the leap into electronic typesetting,
        remaining essentially unchanged. It was popularised in the
1960s with the release of Letraset sheets containing
        Lorem Ipsum passages, and more recently with desktop
publishing software like Aldus PageMaker including versions
```

```html
        of Lorem Ipsum.
    </p>
    <h3>Why do we use it?</h3>
    <p>It is a long established fact that a reader will be distracted
by the readable content of a page when looking at
        its layout. The point of using Lorem Ipsum is that it has a
more-or-less normal distribution of letters, as
        opposed to using 'Content here, content here', making it look
like readable English. Many desktop publishing
        packages and web page editors now use Lorem Ipsum as their
default model text, and a search for 'lorem ipsum'
        will uncover many web sites still in their infancy. Various
versions have evolved over the years, sometimes by
        accident, sometimes on purpose (injected humour and the like).

    </p>
    <h3>Where does it come from?</h3>
    <p>
        Contrary to popular belief, Lorem Ipsum is not simply random
text. It has roots in a piece of classical Latin
        literature from 45 BC, making it over 2000 years old. Richard
McClintock, a Latin professor at Hampden-Sydney
        College in Virginia, looked up one of the more obscure Latin
words, consectetur, from a Lorem Ipsum passage, and
        going through the cites of the word in classical literature,
discovered the undoubtable source. Lorem Ipsum
        comes from sections 1.10.32 and 1.10.33 of "de Finibus Bonorum
et Malorum" (The Extremes of Good and Evil) by
        Cicero, written in 45 BC. This book is a treatise on the
theory of ethics, very popular during the Renaissance.
        The first line of Lorem Ipsum, "Lorem ipsum dolor sit amet..",
comes from a line in section 1.10.32.
        The standard chunk of Lorem Ipsum used since the 1500s is
reproduced below for those interested. Sections
        1.10.32 and 1.10.33 from "de Finibus Bonorum et Malorum" by
Cicero are also reproduced in their exact original
        form, accompanied by English versions from the 1914
translation by H. Rackham.
    </p>
    <h3>Where can I get some?</h3>
    <p>There are many variations of passages of Lorem Ipsum available,
but the majority have suffered alteration in some
        form, by injected humour, or randomised words which don't look
even slightly believable. If you are going to use
        a passage of Lorem Ipsum, you need to be sure there isn't
anything embarrassing hidden in the middle of text.
        All the Lorem Ipsum generators on the Internet tend to repeat
predefined chunks as necessary, making this the
        first true generator on the Internet. It uses a dictionary of
```
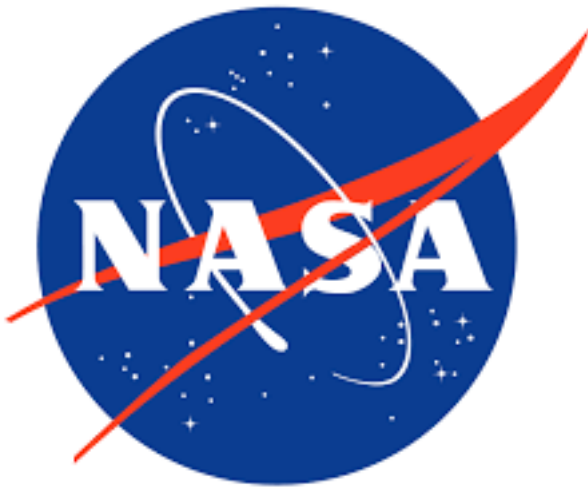
```
over 200 Latin words, combined with a handful of
        model sentence structures, to generate Lorem Ipsum which looks
reasonable. The generated Lorem Ipsum is
        therefore always free from repetition, injected humour, or
non-characteristic words etc.</p>
</body>

</html>
```

Partie 2 : XML - Xpath (manuellement)


```
# vous allez analyser et comprendre le fichier XML suivant  :
spatial.xml

# écrire la syntaxe xpath qui répond aux questions ci-dessous , lors
de la deuxième partie de ce chapitre vous aurez l'occasion d'utiliser
python avec xpath.
```

Récupérez le fichier spatial.xml. Trouvez les requêtes XPath récupérant les informations demandées ci-dessous (Plusieurs solutions sont possibles, vous met- trez celles qui vous paraissent pertinentes dans votre rapport. Attention, il vous est parfois demandé le texte et parfois les noeuds) :

— le nom des nations qui ont un programme spatial

— les astronautes dont le rôle a été au moins une fois commandant

— les dates des missions habités

— la mission du 1965-01-09 si elle est habitée (si elle ne l'est pas, la requête ne renverra rien)

— le nom du commandant de la mission Apollo 11

— le nom des mission sans astronaute enregistré

— la dernière mission américaine enregistrée dans le fichier

— la mission qui précède Voskhod 2 dans le fichier

— les missions où 1 seul astronaute est enregistré

```python
from lxml import etree

# Charger le fichier XML
tree = etree.parse("spatial.xml")

# Définition des xpath
# execution
# affichage

print("Nation name
--------------------------------------------------------------------
------------------------")
print("Xpath: './/nation/@nom'")
xpath_expression = ".//nation/@nom"
nation_name = tree.xpath(xpath_expression)
print("Resultats:", nation_name, "\n")

print("Nom des astronautes commandants
--------------------------------------------------------------------
------------------------")
print("Xpath:
'.//nation/programme/mission/astronaute[@role='commandant']/text()'")
xpath_expression =
".//nation/programme/mission/astronaute[@role='commandant']/text()"
commandant_name = tree.xpath(xpath_expression)
print("Resultats:", commandant_name, "\n")

print("Date des missions habitées
--------------------------------------------------------------------
------------------------")
print("Xpath: './/nation/programme/mission[@type='habité']/@date'")
xpath_expression = ".//nation/programme/mission[@type='habité']/@date"
lived_missions_date = tree.xpath(xpath_expression)
print("Resultats:", lived_missions_date, "\n")

print("Mission du premier octobre 1965
--------------------------------------------------------------------
------------------------")
print("Xpath: './/nation/programme/mission[@date='1965-01-19']
[@type='habité']'")
xpath_expression = ".//nation/programme/mission[@date='1965-01-19']
[@type='habité']"
premier_octobre_1965_mission = tree.xpath(xpath_expression)
print("Resultats:", premier_octobre_1965_mission, "\n")
```

```python
print("Chef mission Apollo 11
----------------------------------------------------------------
------------------------")
print("Xpath: './/nation/programme/mission[@nom='Apollo
11']/astronaute[@role='commandant']/text()'")
xpath_expression = ".//nation/programme/mission[@nom='Apollo
11']/astronaute[@role='commandant']/text()"
chef_mission_Apollo_11 = tree.xpath(xpath_expression)
print("Resultats:", chef_mission_Apollo_11, "\n")

print("Missions sans astronaute
----------------------------------------------------------------
------------------------")
print("Xpath: './/nation/programme/mission[count(astronaute) =
0]/@nom'")
xpath_expression = ".//nation/programme/mission[count(astronaute) =
0]/@nom"
missions_sans_astronaute = tree.xpath(xpath_expression)
print("Resultats:", missions_sans_astronaute, "\n")

print("Derniere mission americane du fichier
----------------------------------------------------------------
------------------------")
print("Xpath:
'.//nation[@nom='USA']/programme[last()]/mission[last()]/@nom'")
xpath_expression =
".//nation[@nom='USA']/programme[last()]/mission[last()]/@nom"
derniere_mission_americaine_fichier = tree.xpath(xpath_expression)
print("Resultats:", derniere_mission_americaine_fichier, "\n")

print("Mission precedent Voskhod 2
----------------------------------------------------------------
------------------------")
print("Xpath: './/nation/programme/mission[@nom='Voskhod
2']/preceding-sibling::*[1]/@nom'")
xpath_expression = ".//nation/programme/mission[@nom='Voskhod
2']/preceding-sibling::*[1]/@nom"
mission_precedent_Voskhod_2 = tree.xpath(xpath_expression)
print("Resultats:", mission_precedent_Voskhod_2, "\n")

print("Mission un astronaute enregistrer
----------------------------------------------------------------
------------------------")
print("Xpath:
'.//nation/programme/mission[count(astronaute)=1]/@nom'")
xpath_expression =
".//nation/programme/mission[count(astronaute)=1]/@nom"
mission_un_astronaute_enregistrer = tree.xpath(xpath_expression)
print("Resultats:", mission_un_astronaute_enregistrer, "\n")
```

```
Nation name
----------------------------------------------------------------
------------------------
Xpath: './/nation/@nom'
Resultats: ['USA', 'URSS']

Nom des astronautes commandants
----------------------------------------------------------------
------------------------
Xpath:
'.//nation/programme/mission/astronaute[@role='commandant']/text()'
Resultats: ['Virgil Grissom', 'John Glenn', 'Scott Carpenter', 'Gordon
Cooper', 'Virgil Grissom', 'James McDivitt', 'Gordon Cooper', 'Franck
Borman', 'Neil Armstrong', 'Thomas Stafford', 'John Young', 'Pete
Conrad', 'Jim Lovell', 'Virgil Grissom', 'Walter Schirra', 'Franck
Borman', 'James McDivitt', 'Thomas Stafford', 'Neil Armstrong', 'Pete
Conrad', 'Jim Lovell', 'Alan Shepard', 'Dave Scott', 'John Young',
'Gene Cernan', 'Youri Gagarine', 'Guerman Titov', 'Andrian Nikolaïev',
'Pavel Popovitch', 'Valeri Bykovski', 'Valentina Terechkova',
'Vladimir Komarov', 'Pavel Beliaïev', 'Vladimir Komarov', 'Gueorgui
Beregovoi', 'Vladimir Shatalov', 'Boris Volynov', 'Georgi Shonin']

Date des missions habitées
----------------------------------------------------------------
------------------------
Xpath: './/nation/programme/mission[@type='habité']/@date'
Resultats: ['1961-05-05', '1961-06-21', '1962-02-20', '1962-05-24',
'1962-10-03', '1963-05-15', '1965-03-23', '1965-06-03', '1965-08-21',
'1965-12-15', '1965-12-04', '1966-03-16', '1966-06-03', '1966-07-18',
'1966-09-12', '1966-11-11', '1967-01-27', '1968-10-11', '1968-12-21',
'1969-03-03', '1969-05-18', '1969-07-16', '1969-11-14', '1970-04-11',
'1971-01-31', '1971-07-26', '1972-04-16', '1972-12-07', '1961-04-12',
'1961-08-06', '1962-08-11', '1962-08-12', '1963-06-14', '1963-06-16',
'1964-10-12', '1965-03-18', '1967-04-23', '1968-10-26', '1969-01-14',
'1969-01-15', '1969-10-11']

Mission du premier octobre 1965
----------------------------------------------------------------
------------------------
Xpath: './/nation/programme/mission[@date='1965-01-19']
[@type='habité']'
Resultats: []

Chef mission Apollo 11
----------------------------------------------------------------
------------------------
Xpath: './/nation/programme/mission[@nom='Apollo
11']/astronaute[@role='commandant']/text()'
Resultats: ['Neil Armstrong']
```

```
Missions sans astronaute
--------------------------------------------------------------------------
------------------------
Xpath: './/nation/programme/mission[count(astronaute) = 0]/@nom'
Resultats: ['Gemini 1', 'Gemini 2', 'Apollo 4', 'Apollo 5', 'Apollo
6', 'Soyouz 2']

Derniere mission americane du fichier
--------------------------------------------------------------------------
------------------------
Xpath: './/nation[@nom='USA']/programme[last()]/mission[last()]/@nom'
Resultats: ['Apollo 17']

Mission precedent Voskhod 2
--------------------------------------------------------------------------
------------------------
Xpath: './/nation/programme/mission[@nom='Voskhod 2']/preceding-
sibling::*[1]/@nom'
Resultats: ['Voskhod 1']

Mission un astronaute enregistrer
--------------------------------------------------------------------------
------------------------
Xpath: './/nation/programme/mission[count(astronaute)=1]/@nom'
Resultats: ['Mercury 3', 'Mercury 4', 'Mercury 6', 'Mercury 7',
'Mercury 8', 'Mercury 9', 'Vostok 1', 'Vostok 2', 'Vostok 3', 'Vostok
4', 'Vostok 5', 'Vostok 6', 'Soyouz 1', 'Soyouz 3']
```



```
<!-- vous allez construire un fichier XML de votre choix, en vous
basant sur une logique structurelle de données simple isnpirée de
```

```xml
NETFLIX :
Titre Film, Producteur, Acteurs, Années, Genres, Pays, Langues, etc.
Vous pouvez vous limiter à 3 enregistrements ! -->
<?xml version="1.0" encoding="UTF-8"?>
<!DOCTYPE programmes SYSTEM "Netflix.dtd">
<programmes>
    <series>
        <serie nom="Peaky Blinders">
            <producteur>Steven Knight</producteur>
            <dateDebut>12 septembre 2013</dateDebut>
            <dateDebut>3 avril 2022</dateDebut>
            <pays>Royaume-Unis</pays>
            <saisons>6</saisons>
            <episodes>36</episodes>
            <genre>Drame historique</genre>
            <acteur>Cillian Murphy</acteur>
            <acteur>Helen McCrory</acteur>
            <acteur>Paul Anderson</acteur>
            <acteur>Sophie Rundle</acteur>
        </serie>
        <serie nom="La casa de papel">
            <producteur>Álex Pina</producteur>
            <dateDebut>2 mai 2017</dateDebut>
            <dateDebut>3 décembre 2021</dateDebut>
            <genre>Drame, Thriller, Braquage</genre>
            <pays>Espagne</pays>
            <saisons>5</saisons>
            <episodes>48</episodes>
            <acteur>Úrsula Corberó</acteur>
            <acteur>Álvaro Morte</acteur>
            <acteur>Itziar Ituño</acteur>
            <acteur>Pedro Alonso</acteur>
        </serie>
        <serie nom="Formula 1: Drive to Survive">
            <producteur>Formula One Group, Netflix</producteur>
            <dateDebut>8 mars 2019</dateDebut>
            <genre>Docu-fiction</genre>
            <saisons>6</saisons>
            <episodes>60</episodes>
        </serie>
    </series>
</programmes>
```

Partie 3 : Faire des RegEx avec python pour aider Amazone dans la validaition des informations entrées pour la création des comptes

```python
# Faire une fonction python qui permet de vérifier si les informations
d'un individu sont correcre , au moment de la création du compte
Amazone:

# - Nom : doit être ne majuscule
# - Prénom : commence apr une majuscule
# - Data de naissance : en jours mois année de deux façons différentes
: JJ/MM/AAAA ou JJ Mois AAAA
# - Adresse : Numéro, voie (rue, avenue, ...), ville, pays, code
postale

import re

def verification_informations(nom, prenom, date_de_naissance,
adresse):
    # Expression régulière pour le nom (doit être en majuscules)
    regex_nom = "^[A-Z]+$"

    # Expression régulière pour le prénom (doit commencer par une
majuscule)
    regex_prenom = "^[A-Z][a-z]*$"

    # Expression régulière pour la date de naissance (JJ/MM/AAAA ou JJ
Mois AAAA)
    regex_date_naissance =
r"^((0[1-9]|[12]\d|3[01])/(0[1-9]|1[0-2])/([0-1]\d{3}|20[0-1][0-9]|
202[0-3]))|(0[1-9]|[12]\d|3[01]) (Janvier|Février|Mars|Avril|Mai|Juin|
Juillet|Août|Septembre|Octobre|Novembre|Décembre) ([0-1]\d{3}|20[0-1]
[0-9]|202[0-3])$"

    # Expression régulière pour l'adresse (numéro, voie (rue,
avenue, ...), ville, pays, code postal)
    regex_adresse = r"^\d+, (Rue|Avenue|Impasse|rue|avenue|impasse)[\
D\s]+, [\D\s]+, [\D\s]+, \d{5}$"

    # Vérification des correspondances
```

```python
    if re.match(regex_nom, nom):
        print(f"{nom} est un nom valide.")
    else:
        print(f"{nom} n'est pas un nom valide.")

    if re.match(regex_prenom, prenom):
        print(f"{prenom} est un prénom valide.")
    else:
        print(f"{prenom} n'est pas un prénom valide.")

    if re.match(regex_date_naissance, date_de_naissance):
        print(f"{date_de_naissance} est une date de naissance
valide.")
    else:
        print(f"{date_de_naissance} n'est pas une date de naissance
valide.")

    if re.match(regex_adresse, adresse):
        print(f"{adresse} est une adresse valide.")
    else:
        print(f"{adresse} n'est pas une adresse valide.")

# Exemples de chaînes à vérifier
noms = ["SMITH", "johnson", "JOHNSON", "MacDonald"]
prenoms = ["John", "mary", "Elizabeth", "Robert"]
dates_de_naissance = ["25/12/1990", "01 Janvier 1985", "12/45/2021",
"12 Mars 2025"]
adresses = ["123, Avenue Foch, Paris, France, 75012", "quarante_cinq,
Impasse du Générale De Gaule, Nanterre, France, 92200", "12, Rue
Anatole France, Nanterre, 7RANC3, 12345", "45, Voldemort, Bordeaux,
France, 54321"]

for i in range(len(noms)):
    verification_informations(noms[i], prenoms[i],
dates_de_naissance[i], adresses[i])
    print("\n",
"----------------------------------------------------------------------
--------------")
```

```
SMITH est un nom valide.
John est un prénom valide.
25/12/1990 est une date de naissance valide.
123, Avenue Foch, Paris, France, 75012 est une adresse valide.


 ----------------------------------------------------------------------
------------
johnson n'est pas un nom valide.
mary n'est pas un prénom valide.
01 Janvier 1985 est une date de naissance valide.
```

```
quarante_cinq, Impasse du Générale De Gaule, Nanterre, France, 92200
n'est pas une adresse valide.


----------------------------------------------------------------------
-------------
JOHNSON est un nom valide.
Elizabeth est un prénom valide.
12/45/2021 n'est pas une date de naissance valide.
12, Rue Anatole France, Nanterre, 7RANC3, 12345 n'est pas une adresse
valide.


----------------------------------------------------------------------
-------------
MacDonald n'est pas un nom valide.
Robert est un prénom valide.
12 Mars 2025 n'est pas une date de naissance valide.
45, Voldemort, Bordeaux, France, 54321 n'est pas une adresse valide.


----------------------------------------------------------------------
-------------
```

Partie 4 : Robots.txt , Connaître les technos d'un site web et les examinations (plan, taille)


```python
# Choisissez un site web qui soit celui d'un ministère français,
print("https://www.defense.gouv.fr/robots.txt")
    # Le ministère des Armées


# Analysez son Robots.txt : écrivez ce que vous comprenez
    # Il permet de dire ce que les bots ou les programmes de scraping
on le droit de récupérer sur ce site:
    # On a le droit de récupérer toutes les photos du site.
```

```
    # On a le droit de récupérer les fichier.xml du site.
    # On n'a pas le droit de récupérer tous les autres fichier et tous
les autres dossiers.
    # De plus le fichier est formater pour que les robots puissent le
lire par eux même.

# Trouvez les technologies utilisées avec builtwith
print("Infos sur les technologies utilisées: https://builtwith.com/?
httpshttps%3a%2f%2fwww.defense.gouv.fr")
    # Google Analytics (Analytics and Tracking)
    # Apple Whitelist (Widgets)
    # Algolia (Widgets)
    # ...

# Trouvez le owner et/ou l'host avec whois
    # Le whois de ce ministère est confidentiel (logique pour le
ministère des armées)
```

```
https://www.defense.gouv.fr/robots.txt
Infos sur les technologies utilisées: https://builtwith.com/?
httpshttps%3a%2f%2fwww.defense.gouv.fr
```

Partie 5 : Résolvez les 6 questions restantes sur l'équipe de france

 X


```python
# nous permet de communiquer , d'échanger ou de requêter sur le web,
# ici on s'y intéresse pour récupérer le connu d'une ou de plusieurs
page web
# grace à un <.get() >
import requests
from lxml import html
page =
requests.get("https://fr.wikipedia.org/wiki/%C3%89quipe_de_France_de_f
ootball")
tree = html.fromstring(page.content)
print(tree)

<Element html at 0x20ab12ab840>

# 5) Combien de fois l'équipe de France a-t-elle remporté la Coupe du
Monde de la FIFA ?
nbr_champion_du_monde =
tree.xpath('//*[@id="mw-content-text"]/div[1]/div[3]/table[4]/tbody/
```

```python
tr[1]/td/a/text()')
print(f"La Frnace a remporter {len(nbr_champion_du_monde)} fois la
Coupe du Monde de la FIFA.")
print(nbr_champion_du_monde)
```

```
La Frnace a remporter 2 fois la Coupe du Monde de la FIFA.
['1998', '2018']
```

```python
# 6) En quelle année l'équipe de France a-t-elle remporté son premier
Championnat d'Europe UEFA ?
premiere_vitoire_championnat_EU = tree.xpath('//*[@id="mw-content-
text"]/div[1]/div[3]/table[4]/tbody/tr[2]/td/a[1]/text()')
print(f"C'est en {premiere_vitoire_championnat_EU[0]} que l'équipe de
France remporte son premier Championnat d'Europe UEFA.")
print(premiere_vitoire_championnat_EU)
```

```
C'est en 1984 que l'équipe de France remporte son premier Championnat
d'Europe UEFA.
['1984']
```

```python
# 7) Lister les cinq derniers adversaires de l'équipe de France selon
la section "Derniers matchs et prochains matchs"
# premiere_vitoire_championnat_EU = tree.xpath('//*[@id="mw-content-
text"]/div[1]/div[3]/table[4]/tbody/tr[2]/td/a[1]/text()')
# print(premiere_vitoire_championnat_EU)
print("Il n'y a pas cette section sur la page Wikipédia de l'équipe de
Frnace.")
```

```
Il n'y a pas cette section sur la page Wikipédia de l'équipe de
Frnace.
```

```python
# 8) Quel est le surnom donné à l'équipe de France de football ?
Surnom =
tree.xpath('//*[@id="mw-content-text"]/div[1]/div[3]/table[1]/tbody/
tr[5]/td/i/text()')
print(f"L'équipe de France à deux surnom: Les {Surnom[0]} et Les
{Surnom[1]}.")
print(Surnom)
```

```
L'équipe de France à deux surnom: Les Bleus et Les Tricolores.
['Bleus', 'Tricolores']
```

```python
# 9) Combien de joueurs l'équipe de France compte-t-elle dans son
"Hall of Fame" ?
nbr_joueurs_connu =
tree.xpath('count(//*[@id="mw-content-text"]/div[1]/div[3]/table[2]/
tbody/tr)')
print(f"Le nombre de personnalité de l'équipe de France est de
{int(nbr_joueurs_connu)}.")
print(nbr_joueurs_connu)
```
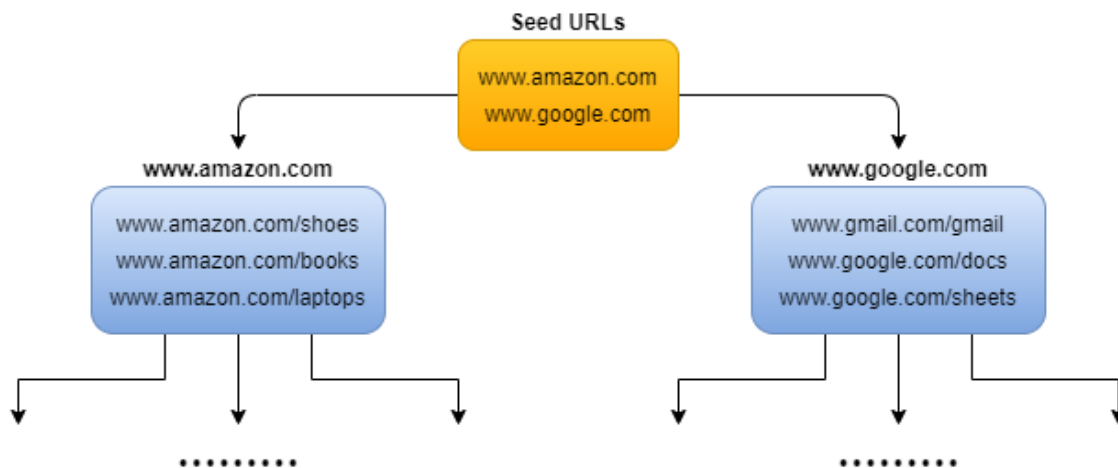
```
Le nombre de personnalité de l'équipe de France est de 4.
4.0

# 10) Quelle est la plus large victoire obtenue par l'équipe de France
?
nom_pays_plus_large_victoire = tree.xpath('//*[@id="mw-content-
text"]/div[1]/div[3]/table[3]/tbody/tr[2]/td/span/a/text()')
score_plus_large_victoire =
tree.xpath('//*[@id="mw-content-text"]/div[1]/div[3]/table[3]/tbody/
tr[2]/td/a/text()')
date_pays_plus_large_victoire = tree.xpath('//*[@id="mw-content-
text"]/div[1]/div[3]/table[3]/tbody/tr[2]/td/small/time/a/text()')
print(f"La plus large victoire de l'équipe de France était contre
{nom_pays_plus_large_victoire[0]} le
{date_pays_plus_large_victoire[0]} {date_pays_plus_large_victoire[1]}
avec un score de {score_plus_large_victoire[0]}.")
print(nom_pays_plus_large_victoire)
print(score_plus_large_victoire)
print(date_pays_plus_large_victoire)

La plus large victoire de l'équipe de France était contre Gibraltar le
18 novembre 2023 avec un score de 14-0.
['Gibraltar']
['14-0']
['18 novembre', '2023']
```

Partie 6 : WEB CRAWLING


```
# Complétez la fonction de web crawling en faisant une recherche
d'hyperliens jusqu'à la 4ème génération (la fonction devra donc être
récursive et s'arrêter en fonction d'un critère)
```

```python
# mémorisez les résultats dans un dictionnaire python sous cette forme
:
# web_indexation = { "Famille" : { "parent_1 " : {"parent_1_1" : {
#
"enfant_1_1_1" : [liste_des_petits_enfants],
#
"enfant_1_1_2" : petit_enfant
#                                                                    },
#                                                        },
#                                            "parent_2" : ... ,
#                                             ...
#                                            "parent_n" : ... ,
#                                            }}

import requests
from lxml import html

def crawl_web(url, current_depth=0, max_depth=4, dictionnaire={}):
    if current_depth == max_depth-1: # Cas de base
        response = requests.get(url)
        tree = html.fromstring(response.content)
        links = tree.xpath('//a/@href')
        dictionnaire[url] = links
        return dictionnaire

    else: # Cas générale
        response = requests.get(url)
        tree = html.fromstring(response.content)
        links = tree.xpath('//a/@href')
        for link in links:
                if link.strip() and not link.startswith('#'): #
Ignorer les liens vides ou les liens d'ancrage
                    if not link.startswith('http'): # Si le lien est
relatif, le rendre absolu
                        link = url + link
                    dictionnaire[link] = crawl_web(url=link,
current_depth=current_depth+1, max_depth=max_depth, dictionnaire={})
        return dictionnaire

# Exemple d'utilisation
url = "https://google.com"
# url = "https://amazon.com"
# url = "https://www.bienici.com/"
# url = "https://ceweb-agency.com/"
# url = ""
dict_web_crawl = crawl_web(url=url, max_depth=4) # Modififez le
max_depth pour changer de génération.
print(dict_web_crawl)
# Le resultat du dessous est fait avec un max_depth de 2 sinon c'est
trop long à afficher et à convertir en pdf .
```

{'https://www.google.com/imghp?hl=fr&tab=wi':
{'https://www.google.com/imghp?hl=fr&tab=wi':
['https://www.google.fr/webhp?tab=iw', 'https://maps.google.fr/maps?
hl=fr&tab=il', 'https://play.google.com/?hl=fr&tab=i8',
'https://www.youtube.com/?tab=i1', 'https://news.google.com/?tab=in',
'https://mail.google.com/mail/?tab=im', 'https://drive.google.com/?
tab=io', 'https://www.google.fr/intl/fr/about/products?tab=ih',
'http://www.google.fr/history/optout?hl=fr', '/preferences?hl=fr',
'https://accounts.google.com/ServiceLogin?
hl=fr&passive=true&continue=https://www.google.com/imghp%3Fhl%3Dfr
%26tab%3Dwi&ec=GAZAAg', '/advanced_image_search?hl=fr&authuser=0',
'/intl/fr/ads/', '/services/', '/intl/fr/about.html',
'/intl/fr/policies/privacy/', '/intl/fr/policies/terms/']},
'https://maps.google.fr/maps?hl=fr&tab=wl':
{'https://maps.google.fr/maps?hl=fr&tab=wl':
['https://accounts.google.com/ServiceLogin?
hl=fr&cd=FR&continue=https://maps.google.fr/maps?hl%3Dfr%26tab
%3Dwl&gae=cb-eomtm', 'https://accounts.google.com/ServiceLogin?
hl=fr&cd=FR&continue=https://maps.google.fr/maps?hl%3Dfr%26tab
%3Dwl&gae=cb-eomtm',
'https://policies.google.com/technologies/cookies?
hl=fr&utm_source=ucb', 'https://consent.google.fr/dl?
continue=https://maps.google.fr/maps?hl%3Dfr%26tab
%3Dwl&gl=FR&hl=fr&cm=2&pc=m&uxe=eomtm&src=1',
'https://policies.google.com/privacy?hl=fr&utm_source=ucb',
'https://policies.google.com/terms?hl=fr&utm_source=ucb']},
'https://play.google.com/?hl=fr&tab=w8': {'https://play.google.com/?
hl=fr&tab=w8': ['/store/games', '/store/apps', '/store/movies',
'/store/books', '/store/apps/category/FAMILY', '/store/games',
'https://policies.google.com/privacy',
'https://myaccount.google.com/termsofservice', '/store/games',
'/store/apps', '/store/movies', '/store/books',
'/store/apps/category/FAMILY', '/store/games?device=windows',
'/store/games?device=phone', '/store/games?device=tablet',
'/store/games?device=tv', '/store/games?device=chromebook',
'/store/games?device=watch', '/store/apps/details?
id=com.farlightgames.igame.gp', '/store/apps/details?
id=com.farlightgames.igame.gp', '/store/apps/details?
id=com.tocaboca.tocalifeworld', '/store/apps/details?
id=com.tocaboca.tocalifeworld', '/store/apps/details?
id=com.stove.epic7.google', '/store/apps/details?
id=com.stove.epic7.google', '/store/apps/editorial?
id=mc_editorialevergreen_top_k_dating_games_fcp',
'/store/apps/editorial?id=mc_editorialmd_monopoly_go_anniversary_fcp',
'/store/apps/details?id=com.scopely.monopolygo',
'/store/apps/editorial?
id=mc_editorialmd_post_install_mobile_lengends_tips_videos_fcp',
'/store/apps/details?id=com.mobile.legends', '/store/apps/editorial?
id=mc_editorialevergreen_top_k_sports_games_fcp',
'/store/apps/details?id=com.nintendo.zaka', '/store/apps/details?

id=com.nintendo.zaka', '/store/apps/editorial?
id=mc_editorialseasonal_earth_day_fcp', '/store/apps/details?
id=com.com2us.smon.normal.freefull.google.kr.android.common',
'/store/apps/details?
id=com.com2us.smon.normal.freefull.google.kr.android.common',
'/store/apps/eventdetails/4831566811725189958', '/store/apps/details?
id=com.topgamesinc.evony', '/store/apps/editorial?
id=mc_editorialevergreen_games_popular_in_mexico_fcp',
'/store/apps/editorial?id=mc_editorialevergreen_top_k_car_games_fcp',
'/store/apps/eventdetails/4829590718197415218', '/store/apps/details?
id=com.activision.callofduty.shooter', '/store/apps/details?
id=com.mxdzzus.google', '/store/apps/details?id=com.mxdzzus.google',
'/store/apps/editorial?
id=mc_editorialevergreen_popular_in_america_fcp',
'/store/apps/details?id=com.roblox.client', '/store/apps/details?
id=com.dts.freefireth', '/store/apps/details?
id=com.king.candycrushsaga', '/store/apps/details?
id=com.tocaboca.tocalifeworld', '/store/apps/details?
id=com.activision.callofduty.shooter', '/store/apps/details?
id=com.nianticlabs.pokemongo', '/store/apps/details?
id=com.dreamgames.royalmatch', '/store/apps/details?
id=com.kitkagames.fallbuddies', '/store/apps/details?
id=com.tencent.ig', '/store/apps/details?
id=com.superplaystudios.dicedreams', '/store/apps/details?
id=com.king.candycrushsodasaga', '/store/apps/details?
id=com.supercell.clashroyale', '/store/apps/details?
id=com.fun.lastwar.gp', '/store/apps/details?id=com.playrix.township',
'/store/apps/details?id=io.randomco.travel', '/store/apps/details?
id=com.supercell.clashofclans', '/store/apps/details?
id=com.vizorapps.klondike', '/store/apps/details?id=com.gof.global',
'/store/apps/details?id=com.igg.android.lordsmobile',
'/store/apps/details?id=com.scopely.monopolygo',
'/store/apps/eventdetails/4828915313705661490', '/store/apps/details?
id=com.bethsoft.falloutshelter',
'/store/apps/eventdetails/4828911322040249541', '/store/apps/details?
id=com.HoYoverse.hkrpgoversea',
'/store/apps/eventdetails/4828858921895022870', '/store/apps/details?
id=com.iz.coloring.games.kids.drawing.color.book.painting.learning.bab
y.toddlers', '/store/apps/eventdetails/4831588190196603575',
'/store/apps/details?id=com.miniclip.basketballstars',
'/store/apps/eventdetails/4831116271320065025', '/store/apps/details?
id=com.playrix.mysterymatters',
'/store/apps/eventdetails/4828828184170899485', '/store/apps/details?
id=com.stove.epic7.google',
'/store/apps/eventdetails/4828514788929008962', '/store/apps/details?
id=com.ea.gp.nbamobile',
'/store/apps/eventdetails/4828254090122005354', '/store/apps/details?
id=com.com2us.smon.normal.freefull.google.kr.android.common',
'/store/apps/details?id=com.supercell.clashofclans',
'/store/apps/details?id=com.supercell.clashroyale',

'/store/apps/details?id=com.dts.freefiremax', '/store/apps/details?id=com.playrix.township', '/store/apps/details?id=com.vizorapps.klondike', '/store/apps/details?id=com.topgamesinc.evony', '/store/apps/details?id=com.bandainamcoent.dblegends_ww', '/store/apps/details?id=com.igg.android.lordsmobile', '/store/apps/details?id=com.rovio.baba', '/store/apps/details?id=com.fgol.HungrySharkEvolution', '/store/apps/details?id=com.os.airforce', '/store/apps/details?id=com.playrix.gardenscapes', '/store/apps/details?id=com.tap4fun.ape.gplay', '/store/apps/details?id=com.mobile.legends', '/store/apps/details?id=com.playrix.homescapes', '/store/apps/details?id=com.gameloft.android.ANMP.GloftA9HM', '/store/apps/details?id=com.kingsgroup.sos', '/store/apps/details?id=com.devsisters.ck', '/store/apps/details?id=com.lockwoodpublishing.avakinlife', '/store/apps/details?id=com.dogbytegames.offtheroad', '/store/apps/details?id=com.netease.newspike', '/store/apps/details?id=com.greenmushroom.boomblitz.gp', '/store/apps/details?id=com.crunchyroll.opm', '/store/apps/details?id=com.nebulajoy.act.dmcpoc', '/store/apps/details?id=com.ohbibi.games.bubble.ship.merge.magnet', '/store/apps/details?id=com.ffsvideogames.eor3f2p', '/store/apps/details?id=com.RightSoftLabs.MvAB', '/store/apps/details?id=com.gameloft.anmp.disney.speedstorm', '/store/apps/details?id=com.origin.rod', '/store/apps/details?id=com.allstarunion.wow.gp', '/store/apps/details?id=com.seaofconquest.global', '/store/apps/details?id=com.darkwind.nucarnival', '/store/apps/details?id=com.nirvanagames.nexuswar', '/store/apps/details?id=com.tiltingpoint.fashionapp', '/store/apps/details?id=com.ubisoft.invincible.guardians.globe.idle.superhero.rpg.battle.afk', '/store/apps/details?id=and.onemt.pos', '/store/apps/details?id=com.goatgames.snd.gb.gp', '/store/apps/details?id=com.square_enix.android_googleplay.ff7ecww', '/store/apps/details?id=leyi.marsactionplus', '/store/apps/details?id=com.mfmyz.sygs', '/store/apps/details?id=com.studion.mergearena', '/store/apps/details?id=com.yoozoo.jgame.us', '/store/apps/details?id=com.com2us.frostpunk.android.google.global.normal', '/store/apps/details?id=com.com2usholdings.soulstrike.android.google.global.normal', '/store/apps/details?id=com.xinshengfun.alsp.en', '/store/apps/details?id=com.wan.wartuneh5', '/store/apps/details?id=com.skrice.mavia', '/store/apps/details?id=com.esg.idle.guild.tycoon', '/store/apps/details?id=beatmaker.edm.musicgames.pianofire2', '/store/apps/details?id=com.notdoppler.earntodierogue', '/store/apps/details?id=hidden.objects.find.it.out.seek.puzzle.games.free', '/store/apps/details?id=com.cyberjoy.geometrytower', '/store/apps/details?id=com.crazysort.supermarket.goodstriple',

'/store/apps/details?id=com.ondi.fortias.saga', '/store/apps/details?
id=com.loongcheer.indra.raziel.oversea', '/store/apps/details?
id=block.wood.jigsaw.game.wooden', '/store/apps/details?
id=classic.solitaire.klondike.free.card', '/store/apps/details?
id=com.HappyTurtle.MrFlip', '/store/apps/details?
id=com.loongcheer.edenight.idlerpg', '/store/apps/details?
id=com.bubbleshooter.pop.dream.classic.panda.puzzle',
'/store/apps/details?id=com.dreamplay.survivalrandomdefense.google',
'/store/apps/details?
id=tile.games.master.match.triple.puzzle.game.free',
'/store/apps/details?id=com.idle.game.burger.tycoon',
'/store/apps/details?id=beatmaker.edm.musicgames.fluffyhop',
'/store/apps/details?id=com.aidiangames.Hedgies.gp',
'/store/apps/details?id=com.astrologicmedia.hiddencats',
'/store/apps/details?id=com.celsiusonline.mutantsgenesis',
'/store/apps/details?id=com.dreamplay.ghostknight.google',
'/store/pass/getstarted', '/store/points/enroll',
'https://play.google.com/about/giftcards', '/redeem',
'https://support.google.com/googleplay/answer/134336',
'https://support.google.com/googleplay?p=pff_parentguide',
'https://support.google.com/googleplay/answer/7007852',
'https://play.google.com/intl/fr_us/about/play-terms.html',
'https://policies.google.com/privacy',
'https://support.google.com/googleplay/?p=about_play',
'http://developer.android.com/index.html', 'https://store.google.com/?
playredirect=true']}, 'https://www.youtube.com/?tab=w1':
{'https://www.youtube.com/?tab=w1': ['/', '/',
'https://www.youtube.com/about/',
'https://www.youtube.com/about/press/',
'https://www.youtube.com/about/copyright/', '/t/contact_us/',
'https://www.youtube.com/creators/', 'https://www.youtube.com/ads/',
'https://developers.google.com/youtube',
'https://support.google.com/youtube/contact/de_cancellation?hl=fr',
'/t/terms', '/t/privacy', 'https://www.youtube.com/about/policies/',
'https://www.youtube.com/howyoutubeworks?
utm_campaign=ytgen&utm_source=ythp&utm_medium=LeftNav&utm_content=txt&
u=https%3A%2F%2Fwww.youtube.com%2Fhowyoutubeworks%3Futm_source%3Dythp
%26utm_medium%3DLeftNav%26utm_campaign%3Dytgen', '/new']},
'https://news.google.com/?tab=wn': {'https://news.google.com/?tab=wn':
['https://support.google.com/googlenews?p=consumer_info', './?hl=en-
US&gl=US&ceid=US%3Aen', 'https://www.google.fr/intl/en/about/products?
tab=nh', 'https://accounts.google.com/ServiceLogin?
passive=1209600&continue=https://news.google.com/home?tab%3Dwn%26hl
%3Den-US%26gl%3DUS%26ceid%3DUS:en&followup=https://news.google.com/
home?tab%3Dwn%26hl%3Den-US%26gl%3DUS%26ceid%3DUS:en&hl=en-
US&ec=GAZAqgM', './home?hl=en-US&gl=US&ceid=US%3Aen', './showcase?
hl=en-US&gl=US&ceid=US%3Aen',
'./topics/CAAqIggKIhxDQkFTRHdvSkwyMHZNRGxqTjNjd0VnSmxiaWdBUAE?hl=en-
US&gl=US&ceid=US%3Aen',
'./topics/CAAqJggKIiBDQkFTRWdvSUwyMHZNRGx1YlY4U0FtVnVHZ0pWWXlnQVAB?

hl=en-US&gl=US&ceid=US%3Aen',
'./topics/CAAqHAgKIhZDQklTQ2pvSWJHOWpZV3hmZGpJb0FBUAE?hl=en-
US&gl=US&ceid=US%3Aen',
'./topics/CAAqJggKIiBDQkFTRWdvSUwyMHZNRGx6TVdZU0FtVnVHZ0pWVXlnQVAB?
hl=en-US&gl=US&ceid=US%3Aen',
'./topics/CAAqJggKIiBDQkFTRWdvSUwyMHZNRGRqTVhZU0FtVnVHZ0pWVXlnQVAB?
hl=en-US&gl=US&ceid=US%3Aen',
'./topics/CAAqJggKIiBDQkFTRWdvSUwyMHZNREpxYW5RU0FtVnVHZ0pWVXlnQVAB?
hl=en-US&gl=US&ceid=US%3Aen',
'./topics/CAAqJggKIiBDQkFTRWdvSUwyMHZNRFp1ZEdvU0FtVnVHZ0pWVXlnQVAB?
hl=en-US&gl=US&ceid=US%3Aen',
'./topics/CAAqJggKIiBDQkFTRWdvSUwyMHZNRFp0Y1RjU0FtVnVHZ0pWVXlnQVAB?
hl=en-US&gl=US&ceid=US%3Aen',
'./topics/CAAqIQgKIhtDQkFTRGdvSUwyMHZNR3QwTlRFU0FtVnVLQUFQAQ?hl=en-
US&gl=US&ceid=US%3Aen', './?hl=en-US&gl=US&ceid=US%3Aen',
'https://support.google.com/googlenews?p=consumer_info&hl=en',
'https://www.weather.com/wx/today/?
lat=48.91&lon=2.25&locale=en_US&par=google',
'./topics/CAAqJggKIiBDQkFTRWdvSUwyMHZNRFZxYUdjU0FtVnVHZ0pWVXlnQVAB?
hl=en-US&gl=US&ceid=US%3Aen',
'./articles/CBMiWWh0dHBzOi8vd3d3LmNic25ld3MuY29tL25ld3MvdHJ1bXAtaHVzaC
1tb25leS10cmlhbC1vcGVuaW5nLXN0YXRlbWVudHMtd2l0bmVzcy10ZXN0aW1vbnkv0gFd
aHR0cHM6Ly93d3cuY2JzbmV3cy5jb20vYW1wL25ld3MvdHJ1bXAtaHVzaC1tb25leS10cm
lhbC1vcGVuaW5nLXN0YXRlbWVudHMtd2l0bmVzcy10ZXN0aW1vbnkv?hl=en-
US&gl=US&ceid=US%3Aen',
'./articles/CBMiWWh0dHBzOi8vd3d3LmNic25ld3MuY29tL25ld3MvdHJ1bXAtaHVzaC
1tb25leS10cmlhbC1vcGVuaW5nLXN0YXRlbWVudHMtd2l0bmVzcy10ZXN0aW1vbnkv0gFd
aHR0cHM6Ly93d3cuY2JzbmV3cy5jb20vYW1wL25ld3MvdHJ1bXAtaHVzaC1tb25leS10cm
lhbC1vcGVuaW5nLXN0YXRlbWVudHMtd2l0bmVzcy10ZXN0aW1vbnkv?hl=en-
US&gl=US&ceid=US%3Aen',
'./articles/CBMiUWh0dHBzOi8vd3d3LmNubi5jb20vcG9saXRpY3MvbGl2ZS1uZXdzL3
RydW1wLWh1c2gtbW9uZXktdHJpYWwtMDQtMjItMjQvaW5kZXguaHRtbNIBAA?hl=en-
US&gl=US&ceid=US%3Aen',
'./articles/CBMiUWh0dHBzOi8vd3d3LmNubi5jb20vcG9saXRpY3MvbGl2ZS1uZXdzL3
RydW1wLWh1c2gtbW9uZXktdHJpYWwtMDQtMjItMjQvaW5kZXguaHRtbNIBAA?hl=en-
US&gl=US&ceid=US%3Aen',
'./articles/CBMia2h0dHBzOi8vd3d3LmZveG5ld3MuY29tL3BvbGl0aWNzL3RydW1wLW
JsYXN0cy1ueS1jcmltaW5hbC1jYXNlLWJpZGVuLXRyaWFsLW1lYW50LWh1cnQtaGltLW5v
dmVtYmVyLWVsZWN0aW9u0gFvaHR0cHM6Ly93d3cuZm94bmV3cy5jb20vcG9saXRpY3MvdH
J1bXAtYmxhc3RzLW55LWNyaW1pbmFsLWNhc2UtYmlkZW4tdHJpYWwtbWVhbnQtaHVydC1o
aW0tbm92ZW1iZXItZWxlY3Rpb24uYW1w?hl=en-US&gl=US&ceid=US%3Aen',
'./articles/CBMia2h0dHBzOi8vd3d3LmZveG5ld3MuY29tL3BvbGl0aWNzL3RydW1wLW
JsYXN0cy1ueS1jcmltaW5hbC1jYXNlLWJpZGVuLXRyaWFsLW1lYW50LWh1cnQtaGltLW5v
dmVtYmVyLWVsZWN0aW9u0gFvaHR0cHM6Ly93d3cuZm94bmV3cy5jb20vcG9saXRpY3MvdH
J1bXAtYmxhc3RzLW55LWNyaW1pbmFsLWNhc2UtYmlkZW4tdHJpYWwtbWVhbnQtaHVydC1o
aW0tbm92ZW1iZXItZWxlY3Rpb24uYW1w?hl=en-US&gl=US&ceid=US%3Aen',
'./articles/CBMiaWh0dHBzOi8vYXBuZXdzLmNvbS9hcnRpY2xlL2dlb3JnaWEtZWxlY3
Rpb24taW5kaWN0bWVudC1mYW5pLXdpbGxpcy10cnVtcC02MGI3ZGQ5NjQzZmM5ZWY3YzAz
ZDc1OTgwNjkyMzM0Y9IBAA?hl=en-US&gl=US&ceid=US%3Aen',
'./articles/CBMiaWh0dHBzOi8vYXBuZXdzLmNvbS9hcnRpY2xlL2dlb3JnaWEtZWxlY3

Rpb24taW5kaWN0bWVudC1mYW5pLXdpbGxpcy10cnVtcC02MGI3ZGQ5NjQyZmM5ZWY3YzAz
ZDc1OTgwNjkyMzM0Y9IBAA?hl=en-US&gl=US&ceid=US%3Aen',
'./stories/CAAqNggKIjBDQklTSGpvSmMzUnZjbmt0TXpZd1NoRUtEd2lOM05TdEN4RWR
PMF91bjJtMmtTZ0FQAQ?hl=en-US&gl=US&ceid=US%3Aen',
'./articles/CBMiT2h0dHBzOi8vd3d3Lm55dGltZXMuY29tLzIwMjQvMDQvMjEvbnlyZW
dpb24vY29sdW1iaWEtcHJvdGVzdHMtYW50aXNlbWl0aXNtLmh0bWzSAQA?hl=en-
US&gl=US&ceid=US%3Aen',
'./articles/CBMiT2h0dHBzOi8vd3d3Lm55dGltZXMuY29tLzIwMjQvMDQvMjEvbnlyZW
dpb24vY29sdW1iaWEtcHJvdGVzdHMtYW50aXNlbWl0aXNtLmh0bWzSAQA?hl=en-
US&gl=US&ceid=US%3Aen',
'./articles/CBMiXWh0dHBzOi8vd3d3LmNubi5jb20vMjAyNC8wNC8yMi9idXNpbmVzcy
9jb2x1bWJpYS10ZW5zaW9ucy1wYXNzb3Zlci12aXJ0dWFsLWNsYXNzZXMvaW5kZXguaHRt
bNIBVmh0dHBzOi8vYW1wLmNubi5jb20vY25uLzIwMjQvMDQvMjIvYnVzaW5lc3MvY29sdW
1iaWEtdGVuc2lvbnMtcGFzc292ZXItdmlydHVhbC1jbGFzc2Vz?hl=en-
US&gl=US&ceid=US%3Aen',
'./articles/CBMiXWh0dHBzOi8vd3d3LmNubi5jb20vMjAyNC8wNC8yMi9idXNpbmVzcy
9jb2x1bWJpYS10ZW5zaW9ucy1wYXNzb3Zlci12aXJ0dWFsLWNsYXNzZXMvaW5kZXguaHRt
bNIBVmh0dHBzOi8vYW1wLmNubi5jb20vY25uLzIwMjQvMDQvMjIvYnVzaW5lc3MvY29sdW
1iaWEtdGVuc2lvbnMtcGFzc292ZXItdmlydHVhbC1jbGFzc2Vz?hl=en-
US&gl=US&ceid=US%3Aen',
'./articles/CBMia2h0dHBzOi8vd3d3LmZveG5ld3MuY29tL2xpdmUtbmV3cy9hbnRpc2
VtaXRpc20tY2FtcHVzLXN1cmdlcy1hZ2l0YXRvcnMtdGFrZS1vdmVyLWNvbHVtYmlhLXlh
bGUtdW5pdmVyc2l0aWVz0gFvaHR0cHM6Ly93d3cuZm94bmV3cy5jb20vbGl2ZS1uZXdzL2
FudGlzZW1pdGlzbS1jYW1wdXMtc3VyZ2VzLWFnaXRhdG9ycy10YWtlLW92ZXItY29sdW1i
aWEteWFsZS11bml2ZXJzaXRpZXMuYW1w?hl=en-US&gl=US&ceid=US%3Aen',
'./articles/CBMia2h0dHBzOi8vd3d3LmZveG5ld3MuY29tL2xpdmUtbmV3cy9hbnRpc2
VtaXRpc20tY2FtcHVzLXN1cmdlcy1hZ2l0YXRvcnMtdGFrZS1vdmVyLWNvbHVtYmlhLXlh
bGUtdW5pdmVyc2l0aWVz0gFvaHR0cHM6Ly93d3cuZm94bmV3cy5jb20vbGl2ZS1uZXdzL2
FudGlzZW1pdGlzbS1jYW1wdXMtc3VyZ2VzLWFnaXRhdG9ycy10YWtlLW92ZXItY29sdW1i
aWEteWFsZS11bml2ZXJzaXRpZXMuYW1w?hl=en-US&gl=US&ceid=US%3Aen',
'./articles/CBMiT2h0dHBzOi8vd3d3Lm55dGltZXMuY29tLzIwMjQvMDQvMjIvdXMvY2
9sdW1iaWEtdW5pdmVyc2l0eS1wcm90ZXN0cy1jbGFzc2VzLmh0bWzSAQA?hl=en-
US&gl=US&ceid=US%3Aen',
'./articles/CBMiT2h0dHBzOi8vd3d3Lm55dGltZXMuY29tLzIwMjQvMDQvMjIvdXMvY2
9sdW1iaWEtdW5pdmVyc2l0eS1wcm90ZXN0cy1jbGFzc2VzLmh0bWzSAQA?hl=en-
US&gl=US&ceid=US%3Aen',
'./stories/CAAqNggKIjBDQklTSGpvSmMzUnZjbmt0TXpZd1NoRUtEd2l0LU9pX0N4RU1
XNDB3eVRXOXlDZ0FQAQ?hl=en-US&gl=US&ceid=US%3Aen',
'./articles/CBMihwFodHRwczovL3d3dy50aGVndWFyZGlhbi5jb20vd29ybGQvbGl2ZS
8yMDI0L2Fwci8yMi9taWRkbGUtZWFzdC1jcmlzaXMtbGl2ZS1pcmFxLW1pbGl0YW50LWdy
b3VwLXNheXMtaXQtd2lsbC1yZXN1bWUtYXR0YWNrcy1vbi11cy1mb3JjZXPSAQA?hl=en-
US&gl=US&ceid=US%3Aen',
'./articles/CBMihwFodHRwczovL3d3dy50aGVndWFyZGlhbi5jb20vd29ybGQvbGl2ZS
8yMDI0L2Fwci8yMi9taWRkbGUtZWFzdC1jcmlzaXMtbGl2ZS1pcmFxLW1pbGl0YW50LWdy
b3VwLXNheXMtaXQtd2lsbC1yZXN1bWUtYXR0YWNrcy1vbi11cy1mb3JjZXPSAQA?hl=en-
US&gl=US&ceid=US%3Aen',
'./stories/CAAqNggKIjBDQklTSGpvSmMzUnZjbmt0TXpZd1NoRUtEd2lvcVpmQ0N4RlB
acm1WNElPRWFTZ0FQAQ?hl=en-US&gl=US&ceid=US%3Aen',
'./articles/CBMiLWh0dHBzOi8vd3d3LmJiYy5jb20vbmV3cy91ay1wb2xpdGljcy02OD
g3MzA1M9IBMWh0dHBzOi8vd3d3LmJiYy5jb20vbmV3cy91ay1wb2xpdGljcy02ODg3MzA1

My5hbXA?hl=en-US&gl=US&ceid=US%3Aen',
'./articles/CBMiLWh0dHBzOi8vd3d3LmJiYy5jb20vbmV3cy91ay1wb2xpdGljy02ODg3MzA1M9IBMWh0dHBzOi8vd3d3LmJiYy5jb20vbmV3cy91ay1wb2xpdGljy02ODg3MzA1My5hbXA?hl=en-US&gl=US&ceid=US%3Aen',
'./stories/CAAqNggKIjBDQklTSGpvSmMzUnZjbmt0TXpZd1NoRUtEEd2o3Z19lNUN4SGVlZFBqVnpnTHZ5Z0FQAQ?hl=en-US&gl=US&ceid=US%3Aen',
'./topics/CAAqHAgKIhZDQklTQ2pvSWJHOWpZV3hmZGpb0FBUAE?hl=en-US&gl=US&ceid=US%3Aen']}, 'https://mail.google.com/mail/?tab=wm':
{'https://mail.google.com/mail/?tab=wm': ['/signin/usernamerecovery?continue=https://mail.google.com/mail/u/0/?tab%3Dwm&dsh=S-486470133:1713796551676011&emr=1&flowEntry=ServiceLogin&flowName=WebLiteSignIn&followup=https://mail.google.com/mail/u/0/?tab%3Dwm&ifkv=ARZ0qKKncPRf4GXoOw5SrzfkeicSRSrj8Q3JbQdOcMO2W5kfeYRQ7akhtRJMhllHjkrVawEU8me5GA&osid=1&service=mail',
'https://support.google.com/accounts?p=signin_privatebrowsing&hl=en-US',
'/lifecycle/flows/signup?continue=https://mail.google.com/mail/u/0/?tab%3Dwm&dsh=S-486470133:1713796551676011&emr=1&flowEntry=SignUp&flowName=GlifWebSignIn&followup=https://mail.google.com/mail/u/0/?tab%3Dwm&ifkv=ARZ0qKKncPRf4GXoOw5SrzfkeicSRSrj8Q3JbQdOcMO2W5kfeYRQ7akhtRJMhllHjkrVawEU8me5GA&osid=1&service=mail',
'https://support.google.com/accounts?hl=en-US&p=account_iph',
'https://accounts.google.com/TOS?loc=FR&hl=en-US&privacy=true',
'https://accounts.google.com/TOS?loc=FR&hl=en-US']},
'https://drive.google.com/?tab=wo': {'https://drive.google.com/?tab=wo':
['/signin/usernamerecovery?continue=https://drive.google.com/?tab%3Dwo&dsh=S-989385485:1713796552106334&emr=1&flowEntry=ServiceLogin&flowName=WebLiteSignIn&followup=https://drive.google.com/?tab%3Dwo&ifkv=ARZ0qKL6t0NrO5U0kjKk0skxLMbTO9dUENNyygAkD1FvYkfj1mYsdm-7-INiqHT1NLY1URQAZLt6&osid=1&service=wise',
'https://support.google.com/accounts?p=signin_privatebrowsing&hl=en-US', '/lifecycle/flows/signup?continue=https://drive.google.com/?tab%3Dwo&dsh=S-989385485:1713796552106334&emr=1&flowEntry=SignUp&flowName=GlifWebSignIn&followup=https://drive.google.com/?tab%3Dwo&ifkv=ARZ0qKL6t0NrO5U0kjKk0skxLMbTO9dUENNyygAkD1FvYkfj1mYsdm-7-INiqHT1NLY1URQAZLt6&osid=1&service=wise',
'https://support.google.com/accounts?hl=en-US&p=account_iph',
'https://accounts.google.com/TOS?loc=FR&hl=en-US&privacy=true',
'https://accounts.google.com/TOS?loc=FR&hl=en-US']},
'https://www.google.fr/intl/fr/about/products?tab=wh':
{'https://www.google.fr/intl/fr/about/products?tab=wh': ['#page-content', '../', '../', '../impact/', '../products/',
'../commitments/', '../stories/', '../',
'https://support.google.com/', '#all-products', '#all-products',
'https://workspace.google.com/blog/product-announcements/generative-ai', 'https://safety.google/?

utm_medium=contextualpromo&utm_source=google&utm_campaign=swg2021&utm_content=utm%20for%20about.google%20productspage',
'https://safety.google/products/?
utm_medium=contextualpromo&utm_source=google&utm_campaign=swg2021&utm_content=utm%20for%20about.google%20productspage/#search',
'https://safety.google/products?
utm_medium=contextualpromo&utm_source=google&utm_campaign=swg2021&utm_content=utm%20for%20about.google%20productspage/#gmail',
'https://safety.google/products/?
utm_medium=contextualpromo&utm_source=google&utm_campaign=swg2021&utm_content=utm%20for%20about.google%20productspage#chrome',
'https://safety.google/products/?
utm_medium=contextualpromo&utm_source=google&utm_campaign=swg2021&utm_content=utm%20for%20about.google%20productspage/#search',
'https://safety.google/products?
utm_medium=contextualpromo&utm_source=google&utm_campaign=swg2021&utm_content=utm%20for%20about.google%20productspage/#gmail',
'https://safety.google/products/?
utm_medium=contextualpromo&utm_source=google&utm_campaign=swg2021&utm_content=utm%20for%20about.google%20productspage#chrome',
'https://safety.google/products/?
utm_medium=contextualpromo&utm_source=google&utm_campaign=swg2021&utm_content=utm%20for%20about.google%20productspage',
'https://www.android.com/google-features-on-android/september-2023/?
utm_source=aboutgoogle&utm_medium=owned&utm_campaign=y23q3spotlight',
'https://www.android.com/intl/fr_fr/phones/',
'https://www.android.com/intl/fr_fr/tablets/',
'https://wearos.google.com/intl/fr_fr/',
'https://www.android.com/intl/fr_fr/auto/', 'https://edu.google.com/',
'https://edu.google.com/why-google/k-12-solutions/',
'https://edu.google.com/products/workspace-for-education/',
'https://edu.google.com/products/classroom/',
'https://edu.google.com/products/chromebooks/',
'https://edu.google.com/products/meet/',
'https://edu.google.com/products/workspace-for-education/',
'https://edu.google.com/products/classroom/',
'https://edu.google.com/products/chromebooks/',
'https://edu.google.com/products/meet/', 'https://news.google.com/',
'https://www.google.com/calendar/about/',
'https://www.android.com/intl/en_us/',
'https://www.android.com/intl/en_us/auto/',
'https://www.android.com/tv/', 'https://assistant.google.com/',
'https://www.google.com/chrome/', 'https://chromeenterprise.google/',
'https://www.google.com/chromebook/',
'https://store.google.com/product/chromecast',
'https://play.google.com/store/apps/details?
id=com.google.android.contacts', 'https://www.google.com/docs/about/?
utm_source=gaboutpage&utm_medium=docslink&utm_campaign=gabout',
'https://chrome.google.com/webstore/detail/google-drawings/mkaakpdehda
facodkgkpghoibnmamcme?hl=en-US', 'https://www.google.com/drive/',

```
'https://www.google.com/earth/',
'https://www.google.co.in/edu/expeditions/',
'https://files.google.com/', 'https://www.google.com/flights',
'https://www.google.com/forms/about/?
utm_source=gaboutpage&utm_medium=formslink&utm_campaign=gabout',
'https://play.google.com/store/apps/details?
id=com.google.android.inputmethod.latin',
'https://gemini.google.com/',
'https://www.gmail.com/intl/en_us/mail/help/about.html',
'https://www.google.com/alerts', 'https://artsandculture.google.com/?
utm_medium=referral&utm_source=about.google',
'https://www.google.com/cast/',
'https://gsuite.google.com/products/chat/',
'https://edu.google.com/workspace-for-education/classroom/',
'https://www.google.com/cloudprint/learn/index.html',
'https://www.google.com/express/', 'https://www.google.com/finance',
'https://play.google.com/store/apps/details?
id=com.google.android.apps.fitness&hl=en',
'https://www.google.com/fonts', 'https://www.google.com/maps/about/',
'https://gsuite.google.com/products/meet/',
'https://one.google.com/about?
utm_source=google_about&utm_medium=web&utm_campaign=products',
'https://www.google.com/inputtools/', 'https://pay.google.com/about/',
'https://play.google.com/store?hl=en',
'https://play.google.com/store/apps/details?
id=com.google.android.apps.books&e=-EnableAppDetailsPageRedesign',
'https://support.google.com/googleplay/answer/4512465',
'https://play.google.com/store/apps/details?
id=com.google.android.play.games&hl=en',
'https://scholar.google.com/intl/en-US/scholar/about.html',
'https://shopping.google.com/u/0/',
'https://store.google.com/regionpicker/', 'https://tv.google/',
'https://wallet.google/', 'https://groups.google.com',
'https://www.google.com/keep/', 'https://lens.google.com/#',
'https://messages.google.com/',
'https://store.google.com/category/connected_home',
'https://store.google.com/product/nest_wifi',
'https://www.google.com/photos/about',
'https://store.google.com/category/phones',
'https://www.android.com/intl/fr_fr/play-protect/',
'https://podcasts.google.com/',
'https://www.google.com/search/about/',
'https://www.google.com/sheets/about/?
utm_source=gaboutpage&utm_medium=sheetslink&utm_campaign=gabout',
'https://sites.google.com/new', 'https://www.google.com/slides/about/?
utm_source=gaboutpage&utm_medium=slideslink&utm_campaign=gabout',
'https://translate.google.com/about',
'https://www.google.com/travel/', 'https://voice.google.com/',
'https://built-in.google/cars/', 'https://www.waze.com/',
'https://wearos.google.com/', 'https://www.youtube.com/yt/about/',
```

```
'https://youtube-global.blogspot.com/2015/02/youtube-kids.html',
'https://www.youtube.com/musicpremium', 'https://tv.youtube.com/?
utm_source=gaboutpage&utm_medium=youtubetv&utm_campaign=gabout',
'https://www.google.com/retail/local-inventory-ads/',
'https://www.google.com/admob/?
utm_source=internal&utm_medium=et&utm_term=goo.gl
%2FPZaclC&utm_content=midpage&utm_campaign=googlehome%26producticon',
'https://www.google.com/adsense/start/?
utm_source=internal&utm_medium=et&utm_campaign=app_switcher_ev_mr&utm_
content=learn_more', 'https://www.google.com/analytics/?
utm_medium=referral-internal&utm_source=google-
products&utm_campaign=product-cross-promo&utm_content=analytics-icon',
'https://enterprise.google.com/android/',
'https://assistant.google.com/business/',
'https://www.blogger.com/features', 'https://businessmessages.google',
'https://www.google.com/retail/shopping-campaigns/',
'https://chromeenterprise.google',
'https://enterprise.google.com/search/',
'https://www.google.com/business/?gmbsrc=ww-ww-et-gs-z-gmb-s-z-h~pro-
z-u&ppsrc=GMBB0&utm_campaign=ww-ww-et-gs-z-gmb-s-z-h~pro-z-
u&utm_source=gmb&utm_medium=et', 'https://admanager.google.com/home/',
'https://ads.google.com/home/?subid=ww-ww-et-g-aw-a-about_products_1-
redlmo2!', 'https://cloud.google.com/',
'https://learndigital.withgoogle.com/digitalactive?
utm_source=Engagement&utm_medium=ep&utm_term=ep&utm_content=FR_EP_PP&u
tm_campaign=Q2_2017_EP_ProductPage',
'https://enterprise.google.com/maps/products/mapsapi.html',
'https://marketingplatform.google.com/',
'https://www.google.com/trends/',
'https://www.google.com/webdesigner/',
'https://workspace.google.com/',
'https://www.google.com/retail/solutions/manufacturer-center/',
'https://www.google.com/retail/merchant-center/',
'https://podcastsmanager.google.com/',
'https://www.google.com/webmasters/tools/home?hl=en',
'https://www.google.com/tagmanager/', 'https://biz.waze.com/',
'https://developers.google.com/business-communications/business-
messages/guides', 'https://wallet.google/',
'https://developers.google.com/products/?hl=fr',
'https://instagram.com/google/',
'https://www.youtube.com/user/Google', 'https://twitter.com/google',
'https://www.facebook.com/Google',
'https://www.linkedin.com/company/google', '../contact-google/',
'https://abc.xyz/investor/', 'https://careers.google.com/',
'../locations/', 'https://www.blog.google/',
'https://www.thinkwithgoogle.com/intl/fr-fr/',
'https://transparency.google', 'https://www.blog.google/press/',
'https://www.blog.google/press/',
'https://www.google.com/permissions/',
'https://www.google.com/about/appsecurity/',
```

'https://www.google.com/about/software-principles.html',
'https://www.google.com/about/unwanted-software-policy.html',
'https://www.google.com/about/responsible-supply-chain/',
'../extended-workforce/',
'https://abc.xyz/investor/conflictminerals/', '../community-
guidelines/', '../how-our-business-works/', '../',
'https://support.google.com?hl=ALL',
'https://www.google.com/policies/privacy/',
'https://www.google.com/policies/terms/']},
'http://www.google.fr/history/optout?hl=fr':
{'http://www.google.fr/history/optout?hl=fr': ['/',
'https://www.google.fr/intl/fr/about/products',
'https://accounts.google.com/ServiceLogin?
passive=1209600&continue=https://www.google.fr/history/optout?hl%3Dfr
%26nzb%3D1&followup=https://www.google.fr/history/optout?hl%3Dfr%26nzb
%3D1&hl=fr&ec=GAZAjQI', '/', 'https://consent.google.fr/d?
continue=https://www.google.fr/history/optout?hl%3Dfr%26nzb
%3D1&gl=FR&m=0&pc=sc&uxe=eomt&cm=5&hl=fr&src=4',
'https://accounts.google.com/login?hl=fr',
'https://accounts.google.com/login?hl=fr']},
'https://google.com/preferences?hl=fr':
{'https://google.com/preferences?hl=fr':
['https://support.google.com/accounts/answer/61416?hl=fr', '/url?
q=https://myactivity.google.com/product/search/controls%3Futm_source
%3Dgoogle%26utm_medium%3Dpref-page%26hl%3Dfr%26authuser
%3D0&opi=89978449&sa=U&ved=0ahUKEwiszobWhdaFAxXqVKQEHY78DDAQ7JsICAE&us
g=AOvVaw3CUw2qQ8SR1xdncsdctw50',
'/url?q=/setting/search/privateresults%3Fhl%3Dfr%26authuser
%3D0&opi=89978449&sa=U&ved=0ahUKEwiszobWhdaFAxXqVKQEHY78DDAQ-
vUJCAI&usg=AOvVaw0KGq7th1NzzTw3l8jl-cd3', '/url?q=/safesearch%3Fhl
%3Dfr%26prev%3Dhttps://www.google.com/preferences%3Fhl
%253Dfr&opi=89978449&sa=U&ved=0ahUKEwiszobWhdaFAxXqVKQEHY78DDAQ1fMKCAM
&usg=AOvVaw2Hb8MHZibfeQLGiDVrXucU',
'https://support.google.com/websearch/?
p=display_language&utm_source=google&utm_medium=pref-page&hl=fr',
'/url?q=https://support.google.com/websearch/%3Fp%3Dws_results_help
%26hl%3Dfr%26fg
%3D1&opi=89978449&sa=U&ved=0ahUKEwiszobWhdaFAxXqVKQEHY78DDAQ8KwCCAg&us
g=AOvVaw2o9ycbXPhi2gN6AWFJrORN',
'/url?q=https://policies.google.com/privacy%3Fhl%3Dfr%26fg
%3D1&opi=89978449&sa=U&ved=0ahUKEwiszobWhdaFAxXqVKQEHY78DDAQ8awCCAk&us
g=AOvVaw0M7u5TTMmJJu9sfNWGFYJ-',
'/url?q=https://policies.google.com/terms%3Fhl%3Dfr%26fg
%3D1&opi=89978449&sa=U&ved=0ahUKEwiszobWhdaFAxXqVKQEHY78DDAQ8qwCCAo&us
g=AOvVaw3yWOTG7HohZF57lsTP3u47']},
'https://accounts.google.com/ServiceLogin?
hl=fr&passive=true&continue=https://www.google.com/&ec=GAZAAQ':
{'https://accounts.google.com/ServiceLogin?
hl=fr&passive=true&continue=https://www.google.com/&ec=GAZAAQ':
['/signin/usernamerecovery?continue=https://www.google.com/&dsh=S-

1962696007:1713796553084583&ec=GAZAAQ&flowEntry=ServiceLogin&flowName=
WebLiteSignIn&hl=fr&ifkv=ARZ0qKKK7-
LhC8Q7aKGmCJsq2CP0UtUEXREON0IJ0r60SvYp_ZVhUVSe7BZJfO6P8KGPAzhN1rty',
'https://support.google.com/accounts?p=signin_privatebrowsing&hl=fr',
'/lifecycle/flows/signup?continue=https=https://www.google.com/&dsh=S-
1962696007:1713796553084583&ec=GAZAAQ&flowEntry=SignUp&flowName=GlifWe
bSignIn&hl=fr&ifkv=ARZ0qKKK7-
LhC8Q7aKGmCJsq2CP0UtUEXREON0IJ0r60SvYp_ZVhUVSe7BZJfO6P8KGPAzhN1rty',
'https://support.google.com/accounts?hl=fr&p=account_iph',
'https://accounts.google.com/TOS?loc=FR&hl=fr&privacy=true',
'https://accounts.google.com/TOS?loc=FR&hl=fr']},
'https://google.com/search?sca_esv=f65ab4fb82876b19&sca_upv=1&ie=UTF-
8&q=progr
%C3%A8s+contre+le+changement+climatique&oi=ddle&ct=308473234&hl=fr&si=
AKbGX_oBDfquzodaRrfbb9img4kPQ4fCBZjeqAiaW1svvC8uXrZKgDPeXQYIbne_APYeKM
sl0e5Y6yaMWADTUWQnv8bjbSBBvuqUzUBcON9YmKgkBdjt62E6o29zxxl0jdSKuCkQSiw1
zcMJXsf88DnqnfD9gLuTVVp48IX08KiYaB3lsBMHbLn2tsFpF7bemM6gq7yjrSeO&sa=X&
ved=0ahUKEwjh0MfUhdaFAxW-UKQEHRUADVMQPQgD':
{'https://google.com/search?sca_esv=f65ab4fb82876b19&sca_upv=1&ie=UTF-
8&q=progr
%C3%A8s+contre+le+changement+climatique&oi=ddle&ct=308473234&hl=fr&si=
AKbGX_oBDfquzodaRrfbb9img4kPQ4fCBZjeqAiaW1svvC8uXrZKgDPeXQYIbne_APYeKM
sl0e5Y6yaMWADTUWQnv8bjbSBBvuqUzUBcON9YmKgkBdjt62E6o29zxxl0jdSKuCkQSiw1
zcMJXsf88DnqnfD9gLuTVVp48IX08KiYaB3lsBMHbLn2tsFpF7bemM6gq7yjrSeO&sa=X&
ved=0ahUKEwjh0MfUhdaFAxW-UKQEHRUADVMQPQgD':
['https://accounts.google.com/ServiceLogin?hl=fr&continue=https://
www.google.com/search?sca_esv%3Df65ab4fb82876b19%26sca_upv%3D1%26ie
%3DUTF-8%26q%3Dprogr%25C3%25A8s%2Bcontre%2Ble%2Bchangement
%2Bclimatique%26oi%3Dddle%26ct%3D308473234%26hl%3Dfr%26si
%3DAKbGX_oBDfquzodaRrfbb9img4kPQ4fCBZjeqAiaW1svvC8uXrZKgDPeXQYIbne_APY
eKMsl0e5Y6yaMWADTUWQnv8bjbSBBvuqUzUBcON9YmKgkBdjt62E6o29zxxl0jdSKuCkQS
iw1zcMJXsf88DnqnfD9gLuTVVp48IX08KiYaB3lsBMHbLn2tsFpF7bemM6gq7yjrSeO
%26sa%3DX%26ved%3D0ahUKEwjh0MfUhdaFAxW-UKQEHRUADVMQPQgD&gae=cb-none',
'https://accounts.google.com/ServiceLogin?hl=fr&continue=https://www.g
oogle.com/search?sca_esv%3Df65ab4fb82876b19%26sca_upv%3D1%26ie%3DUTF-
8%26q%3Dprogr%25C3%25A8s%2Bcontre%2Ble%2Bchangement%2Bclimatique%26oi
%3Dddle%26ct%3D308473234%26hl%3Dfr%26si
%3DAKbGX_oBDfquzodaRrfbb9img4kPQ4fCBZjeqAiaW1svvC8uXrZKgDPeXQYIbne_APY
eKMsl0e5Y6yaMWADTUWQnv8bjbSBBvuqUzUBcON9YmKgkBdjt62E6o29zxxl0jdSKuCkQS
iw1zcMJXsf88DnqnfD9gLuTVVp48IX08KiYaB3lsBMHbLn2tsFpF7bemM6gq7yjrSeO
%26sa%3DX%26ved%3D0ahUKEwjh0MfUhdaFAxW-UKQEHRUADVMQPQgD&gae=cb-none',
'https://policies.google.com/technologies/cookies?
hl=fr&utm_source=ucb', 'https://consent.google.com/dl?
continue=https://www.google.com/search?sca_esv
%3Df65ab4fb82876b19%26sca_upv%3D1%26ie%3DUTF-8%26q%3Dprogr%25C3%25A8s
%2Bcontre%2Ble%2Bchangement%2Bclimatique%26oi%3Dddle%26ct
%3D308473234%26hl%3Dfr%26si
%3DAKbGX_oBDfquzodaRrfbb9img4kPQ4fCBZjeqAiaW1svvC8uXrZKgDPeXQYIbne_APY
eKMsl0e5Y6yaMWADTUWQnv8bjbSBBvuqUzUBcON9YmKgkBdjt62E6o29zxxl0jdSKuCkQS

iw1zcMJXsf88DnqnfD9gLuTVVp48IXO8KiYaB3lsBMHbLn2tsFpF7bemM6gq7yjrSeO
%26sa%3DX%26ved%3D0ahUKEwjh0MfUhdaFAxW-
UKQEHRUADVMQPQgD&gl=FR&hl=fr&cm=2&pc=srp&uxe=none&src=1',
'https://policies.google.com/privacy?hl=fr&utm_source=ucb',
'https://policies.google.com/terms?hl=fr&utm_source=ucb']},
'https://google.com/advanced_search?hl=fr&authuser=0':
{'https://google.com/advanced_search?hl=fr&authuser=0': ['/webhp?
tab=ww', 'https://www.google.fr/intl/fr/about/products?tab=wh',
'https://accounts.google.com/ServiceLogin?
hl=fr&passive=true&continue=https://www.google.com/advanced_search
%3Fhl%3Dfr%26authuser%3D0&ec=GAZAAQ', '/webhp?tab=ww',
'https://support.google.com/websearch?p=ws_images_usagerights&hl=fr',
'https://support.google.com/websearch?p=adv_pages_similar&hl=fr',
'https://support.google.com/websearch?p=adv_pages_visited&hl=fr',
'https://support.google.com/websearch?p=adv_operators&hl=fr',
'/preferences?hl=fr',
'/url?q=https://support.google.com/websearch/%3Fp%3Dws_results_help
%26hl%3Dfr%26fg
%3D1&opi=89978449&sa=U&ved=0ahUKEwjVxK3WhdaFAxWORKQEHQ1TBsgQ8KwCCAI&us
g=AOvVaw303W6B1e3Kulbs1fgEx-h1',
'/url?q=https://policies.google.com/privacy%3Fhl%3Dfr%26fg
%3D1&opi=89978449&sa=U&ved=0ahUKEwjVxK3WhdaFAxWORKQEHQ1TBsgQ8awCCAM&us
g=AOvVaw2X19slaijw0bWgUI3S6zpb',
'/url?q=https://policies.google.com/terms%3Fhl%3Dfr%26fg
%3D1&opi=89978449&sa=U&ved=0ahUKEwjVxK3WhdaFAxWORKQEHQ1TBsgQ8qwCCAQ&us
g=AOvVaw0D6jXhCq6V-xu_-ZccJijb',
'/url?q=https://support.google.com/websearch%3Fp%3Dfr_consumer_info
%26hl%3Dfr%26fg
%3D1&opi=89978449&sa=U&ved=0ahUKEwjVxK3WhdaFAxWORKQEHQ1TBsgQ9NMDCAU&us
g=AOvVaw30cg9kWEcugW3gZ1Nhm0YE',
'/url?q=https://support.google.com/legal/answer/3110420%3Fhl%3Dfr%26fg
%3D1&opi=89978449&sa=U&ved=0ahUKEwjVxK3WhdaFAxWORKQEHQ1TBsgQqLkICAY&us
g=AOvVaw0h7e_--BxscXwyym1XtFAv']}, 'https://www.google.com/url?
q=https://sustainability.google/intl/fr_fr/
&source=hpp&id=19041546&ct=3&usg=AOvVaw0xdc51CfClxznF-
QSeHpqe&sa=X&ved=0ahUKEwjh0MfUhdaFAxW-UKQEHRUADVMQ8IcBCAU':
{'https://www.google.com/url?q=https://sustainability.google/intl/
fr_fr/&source=hpp&id=19041546&ct=3&usg=AOvVaw0xdc51CfClxznF-
QSeHpqe&sa=X&ved=0ahUKEwjh0MfUhdaFAxW-UKQEHRUADVMQ8IcBCAU':
['#content', './', './', 'empowering-individuals/', 'working-
together/', 'working-together/', 'working-together/tools/',
'operating-sustainably/', 'operating-sustainably/', 'operating-
sustainably/net-zero-carbon/', 'operating-sustainably/water-
stewardship/', 'operating-sustainably/circular-economy/', 'operating-
sustainably/nature-biodiversity/', 'operating-sustainably/stories/',
'reports/', 'https://blog.google/products/travel/google-travel-impact-
model-sustainability/', 'https://blog.google/products/travel/building-
sustainable-future-travel/', '/intl/fr/travel/',
'https://blog.google/outreach-initiatives/sustainability/google-

```
transportation-energy-emissions-reduction/',
'https://blog.google/products/search/new-ways-to-make-more-
sustainable-choices/', 'https://ourworldindata.org/transport',
'https://blog.google/around-the-globe/google-europe/eco-friendly-
routing-in-europe/', 'https://cloud.google.com/blog/products/maps-
platform/new-advanced-routing-and-map-customization-capabilities',
'https://blog.google/products/maps/sustainable-immersive-maps-
announcements/', 'https://blog.google/products/travel/find-more-
sustainable-travel-options-with-new-search-tools/', 'empowering-
individuals/', 'empowering-individuals/', 'working-together/',
'working-together/', 'operating-sustainably/', 'operating-
sustainably/', 'empowering-individuals/#google-maps', 'empowering-
individuals/#google-shopping', 'empowering-individuals/#travel',
'empowering-individuals/#google-nest', 'working-together/tools/earth-
engine/', 'working-together/tools/environmental-insights-explorer/',
'operating-sustainably/', 'operating-sustainably/', '#net-zero-
carbon', '#water-stewardship', '#circular-economy', '#nature-
biodiversity', 'operating-sustainably/net-zero-carbon/', 'operating-
sustainably/net-zero-carbon/', 'https://blog.google/outreach-
initiatives/sustainability/equitable-clean-energy-transition/',
'https://blog.google/around-the-globe/google-europe/clean-energy-
progress/',
'https://blog.google/outreach-initiatives/sustainability/greenhouse-
gas-protocol-comments/',
'https://www.gstatic.com/gumdrop/sustainability/google-2022-climate-
action-progress-update.pdf', 'operating-sustainably/water-
stewardship/', 'operating-sustainably/water-stewardship/',
'https://blog.google/outreach-initiatives/sustainability/3-ways-were-
tackling-water-challenges-in-india/', 'https://blog.google/outreach-
initiatives/sustainability/ask-a-techspert-bay-view-water-positive/',
'https://blog.google/inside-google/infrastructure/a-sustainable-
solution-helped-a-small-town-cool-its-data-center/',
'https://blog.google/outreach-initiatives/sustainability/our-
commitment-to-climate-conscious-data-center-cooling/', 'operating-
sustainably/circular-economy/', 'operating-sustainably/circular-
economy/',
'https://blog.google/outreach-initiatives/sustainability/google-
plastic-pollution-reduction/', 'https://blog.google/outreach-
initiatives/entrepreneurs/circular-economy-accelerator/',
'https://blog.google/outreach-initiatives/sustainability/single-use-
plastics-challenge/',
'https://www.gstatic.com/gumdrop/sustainability/closing-plastics-gap-
full-report.pdf', 'operating-sustainably/nature-biodiversity/',
'operating-sustainably/nature-biodiversity/',
'https://blog.google/intl/en-au/company-news/technology/monitoring-
wildlife-with-ai/',
'https://blog.google/outreach-initiatives/sustainability/world-
wildlife-day-2022/',
'https://blog.google/outreach-initiatives/sustainability/monarch-
```

butterflies-california/',
'https://blog.google/outreach-initiatives/sustainability/restoring-native-habitats-silicon-valley/', 'https://blog.google/intl/fr-fr/',
'https://www.gstatic.com/gumdrop/sustainability/247-carbon-free-energy.pdf', 'https://www.gstatic.com/gumdrop/sustainability/google-water-stewardship.pdf',
'https://www.gstatic.com/gumdrop/sustainability/google-2022-climate-action-progress-update.pdf',
'https://www.gstatic.com/gumdrop/sustainability/closing-plastics-gap-full-report.pdf', 'empowering-individuals/',
'empowering-individuals/#google-maps',
'empowering-individuals/#google-search',
'empowering-individuals/#travel', 'empowering-individuals/#google-shopping', 'empowering-individuals/#google-nest',
'https://www.google.com/intl/fr/accessibility/',
'https://crisisresponse.google/', 'https://wellbeing.google/',
'https://about.google/belonging/', 'https://safety.google/',
'https://health.google/', 'https://grow.google/intl/fr_fr/#filter',
'working-together/', 'https://www.datacommons.org/',
'https://insights.sustainability.google/',
'https://earth.google.com/web/', 'working-together/tools/',
'operating-sustainably/', 'operating-sustainably/net-zero-carbon/',
'operating-sustainably/water-stewardship/',
'operating-sustainably/circular-economy/',
'operating-sustainably/nature-biodiversity/',
'operating-sustainably/stories/',
'https://www.gstatic.com/gumdrop/sustainability/google-2023-environmental-report.pdf',
'https://www.gstatic.com/gumdrop/sustainability/alphabet-2023-cdp-climate-change-response.pdf',
'https://www.gstatic.com/gumdrop/sustainability/google-2023-supplier-responsibility-report.pdf',
'https://www.gstatic.com/gumdrop/sustainability/google-2023-eu-nfrd-report.pdf', 'https://www.gstatic.com/gumdrop/sustainability/2022-google-statement-against-modern-slavery.pdf',
'https://www.gstatic.com/gumdrop/sustainability/google-2022-climate-action-progress-update.pdf', 'reports/',
'https://www.google.com/intl/fr/accessibility/',
'https://crisisresponse.google/', 'https://wellbeing.google/',
'https://about.google/belonging/', 'https://safety.google/',
'https://health.google/', 'https://grow.google/intl/fr_fr/#filter',
'https://www.google.com', 'https://about.google/?
utm_source=sustainability.google&utm_medium=referral&utm_campaign=sustainability-footer-en', 'https://about.google/products/',
'https://policies.google.com/privacy',
'https://policies.google.com/terms', 'https://support.google.com/']},
'https://google.com/intl/fr/ads/': {'https://google.com/intl/fr/ads/':
['#main-page-content', './../home/', 'https://myaccount.google.com/',
'//accounts.google.com/Logout', 'https://policies.google.com/privacy',

```
'https://myaccount.google.com/termsofservice',
'//ads.google.com/nav/selectaccount?dst=/aw/campaigns/new/express&subi
d=ALL-fr-awhp-g-aw-{device}-home-sso!o2-adshp-hv-q4-22',
'./../home/ads-experts-support/#contact-hub',
'//ads.google.com/nav/login?subid=ALL-fr-awhp-g-aw-{device}-home-
signin!o2-adshp-hv-q4-22', '//ads.google.com/signup?subid=ALL-fr-awhp-
g-aw-{device}-home-top!o2-adshp-hv-q4-22', './../home/',
'./../home/goals/', '#', './../home/campaigns/search-ads/',
'./../home/campaigns/performance-max/', './../home/campaigns/display-
ads/', './../home/campaigns/shopping-ads/',
'./../home/campaigns/video-ads/', './../home/campaigns/app-ads/',
'./../home/campaigns/smart-campaigns/', './../home/campaigns/demand-
gen/', './../home/measurement/', './../home/measurement/conversion-
tracking/', './../home/measurement/bidding/', './../home/campaigns/ai-
powered-ad-solutions/', './../home/tools/', './../home/tools/keyword-
planner/', './../home/tools/manager-accounts/', './../home/tools/ads-
editor/', './../home/tools/reach-planner/', './../home/tools/mobile-
app/', './../home/tools/insights-finder/', './../home/tools/api/',
'./../home/tools/performance-planner/',
'./../home/tools/experiments/', './../home/tools/recommendations/',
'./../home/tools/audience-insights/', '#', './../home/partners/work-
with-a-partner/', './../home/partners/become-a-partner/',
'./../home/ads-experts-support/',
'./../home/ads-experts-support/#contact-hub',
'//ads.google.com/nav/login?subid=ALL-fr-awhp-g-aw-{device}-home-
signin!o2-adshp-hv-q4-22', '//ads.google.com/signup?subid=ALL-fr-awhp-
g-aw-{device}-home-top!o2-adshp-hv-q4-22',
'https://myaccount.google.com/', '//accounts.google.com/Logout',
'https://policies.google.com/privacy',
'https://myaccount.google.com/termsofservice',
'//ads.google.com/nav/selectaccount?dst=/aw/campaigns/new/express&subi
d=ALL-fr-awhp-g-aw-{device}-home-sso!o2-adshp-hv-q4-22',
'./../home/campaigns/search-ads/', './../home/campaigns/performance-
max/', './../home/campaigns/display-ads/',
'./../home/campaigns/shopping-ads/', './../home/campaigns/video-ads/',
'./../home/campaigns/app-ads/', './../home/campaigns/smart-
campaigns/', './../home/campaigns/demand-gen/',
'./../home/measurement/', './../home/measurement/conversion-
tracking/', './../home/measurement/bidding/', './../home/campaigns/ai-
powered-ad-solutions/', './../home/tools/', './../home/tools/keyword-
planner/', './../home/tools/manager-accounts/', './../home/tools/ads-
editor/', './../home/tools/reach-planner/', './../home/tools/mobile-
app/', './../home/tools/insights-finder/', './../home/tools/api/',
'./../home/tools/performance-planner/',
'./../home/tools/experiments/', './../home/tools/recommendations/',
'./../home/tools/audience-insights/', './../home/partners/work-with-a-
partner/', './../home/partners/become-a-partner/',
'//ads.google.com/signup?subid=ALL-fr-awhp-g-aw-{device}-home-flo!o2-
adshp-hv-q4-22', '#', 'https://ads.google.com/signup?subid=ALL-fr-
```

awhp-g-aw-{device}-home-mod!o2-adshp-hv-q4-22',
'https://www.google.com/intl/fr/ads/coupons/terms/fr_mena/',
'//ads.google.com/signup?subid=ALL-fr-awhp-g-aw-{device}-home-hero!o2-
adshp-hv-q4-22', './../home/ads-experts-support/',
'./../home/campaigns/search-ads/', './../home/campaigns/display-ads/',
'./../home/campaigns/shopping-ads/', './../home/campaigns/video-ads/',
'./../home/campaigns/app-ads/', './../home/goals/', './../home/ads-
experts-support/', 'https://blog.google/products/ads/',
'https://twitter.com/googleadsfr',
'https://www.youtube.com/user/learnwithgooglefr',
'https://www.facebook.com/FRGoogleAds', './../home/',
'./../home/goals/', './../home/ads-experts-support/',
'https://support.google.com/google-ads/answer/6146252?
utm_medium=et&utm_campaign=fr&utm_source=ww-ww-et-b2bfooter_adwords',
'https://support.google.com/google-ads/#topic=10286612',
'https://support.google.com/google-ads/community?ctx=lithium',
'https://learndigital.withgoogle.com/atelierdigital-fr/',
'https://skillshop.exceedlms.com/student/catalog/list?category_ids=53-
google-
ads&use_locale=true&utm_source=website&utm_medium=website&utm_campaign
=GoogleAdsSite', 'https://developers.google.com/?utm_source=devtools',
'https://ads.google.com/intl/fr_fr/home/tools/api/',
'https://developers.google.com/google-ads/scripts/docs/start?
utm_source=devtools&hl=fr',
'https://support.google.com/google-ads/answer/2476688',
'https://www.google.fr/intl/fr/retail/solutions/performance-max/',
'https://www.google.fr/intl/fr/business/',
'https://www.google.com/intl/fr/chrome/',
'https://waze.com/business/',
'https://smallbusiness.withgoogle.com/intl/fr_fr/?subid=fr-fr-et-g-
awa-a-g_hpbfoot1_1!
o2&utm_source=google&utm_medium=ep&utm_campaign=google_hpbfooter&utm_c
ontent=google_hpbfooter&gmbsrc=fr-fr-et-gs-z-gmb-s-z-u~sb-g4sb_srvcs-
u#!/', 'https://workspace.google.fr/intl/fr/',
'https://www.thinkwithgoogle.com/intl/fr-fr/',
'https://adsense.google.com/start/?subid=ww-en-et-ads-ot-a-google_ads!
o3&utm_source=internal&utm_medium=et&utm_campaign=google_ads',
'https://admob.google.com/intl/fr_ALL/home/',
'https://www.google.com', 'https://policies.google.com/privacy',
'https://policies.google.com/terms', 'https://about.google/intl/fr/',
'https://about.google/intl/fr/products/',
'https://support.google.com/google-ads/']},
'https://google.com/services/': {'https://google.com/services/':
['https://smallbusiness.withgoogle.com/intl/fr_fr/?subid=fr-fr-et-g-
awa-a-g_hpbfoot1_1!
o2&utm_source=google&utm_medium=ep&utm_campaign=google_hpbfooter&utm_c
ontent=google_hpbfooter&gmbsrc=fr-fr-et-gs-z-gmb-s-z-u~sb-g4sb_srvcs-
u']}, 'https://google.com/intl/fr/about.html':
{'https://google.com/intl/fr/about.html': ['./', '#page-content',

'./', './', 'impact/', 'products/', 'commitments/', 'stories/',
'./stories/year-in-search/', './products/',
'https://support.google.com/',
'https://safety.google/intl/FR_fr/products/',
'https://workspace.google.com/', './impact/', './stories/azerty/',
'./commitments/', 'https://sustainability.google/intl/fr/',
'https://learndigital.withgoogle.com/ateliersnumeriques/',
'./stories/', './stories/barral-ia/', './stories/antibiogo-msf/',
'./stories/favoriser-emploi/', './stories/cybersecurite-ia/',
'https://instagram.com/google/',
'https://www.youtube.com/user/Google', 'https://twitter.com/google',
'https://www.facebook.com/Google',
'https://www.linkedin.com/company/google', 'contact-google/',
'https://abc.xyz/investor/', 'https://careers.google.com/',
'locations/', 'https://www.blog.google/',
'https://www.thinkwithgoogle.com/intl/fr-fr/',
'https://transparency.google', 'https://www.blog.google/press/',
'https://www.blog.google/press/',
'https://www.google.com/permissions/',
'https://www.google.com/about/appsecurity/',
'https://www.google.com/about/software-principles.html',
'https://www.google.com/about/unwanted-software-policy.html',
'https://www.google.com/about/responsible-supply-chain/', 'extended-
workforce/', 'https://abc.xyz/investor/conflictminerals/', 'community-
guidelines/', 'how-our-business-works/', './',
'https://support.google.com?hl=ALL',
'https://www.google.com/policies/privacy/',
'https://www.google.com/policies/terms/']},
'https://www.google.com/setprefdomain?prefdom=FR&prev=https://www.goog
le.fr/&sig=K_YNmC_di8iA0dBgjA7xBzgaaI8FY%3D':
{'https://www.google.com/setprefdomain?prefdom=FR&prev=https://www.goo
gle.fr/&sig=K_YNmC_di8iA0dBgjA7xBzgaaI8FY%3D':
['https://www.google.fr/imghp?hl=fr&tab=wi',
'https://maps.google.fr/maps?hl=fr&tab=wl', 'https://play.google.com/?
hl=fr&tab=w8', 'https://www.youtube.com/?tab=w1',
'https://news.google.com/?tab=wn', 'https://mail.google.com/mail/?
tab=wm', 'https://drive.google.com/?tab=wo',
'https://www.google.fr/intl/fr/about/products?tab=wh',
'http://www.google.fr/history/optout?hl=fr', '/preferences?hl=fr',
'https://accounts.google.com/ServiceLogin?
hl=fr&passive=true&continue=https://www.google.fr/&ec=GAZAAQ',
'/search?sca_esv=f65ab4fb82876b19&ie=UTF-8&q=progr
%C3%A8s+contre+le+changement+climatique&oi=ddle&ct=308473234&hl=fr&si=
AKbGX_oBDfquzodaRrfbb9img4kPQ4fCBZjeqAiaW1svvC8uXrZKgDPeXQYIbne_APYeKM
sl0e5Y6yaMWADTUWQnv8bjbSBBvuqUzUBcON9YmKgkBdjt62E6o29zxxl0jdSKuCkQSiw1
zcMJXsf88DnqnfD9gLuTVVp48IXO8KiYaB3lsBMHbLn2tsFpF7bemM6gq7yjrSeO&sa=X&
ved=0ahUKEwjinOvWhdaFAxVpUaQEHeigBrIQPQgD', '/advanced_search?
hl=fr&authuser=0',
'https://www.google.com/url?q=https://sustainability.google/intl/fr_fr

```
/&source=hpp&id=19041546&ct=3&usg=AOvVaw0xdc51CfClxznF-
QSeHpqe&sa=X&ved=0ahUKEwjinOvWhdaFAxVpUaQEHeigBrIQ8IcBCAU',
'/intl/fr/ads/', '/services/', '/intl/fr/about.html',
'https://www.google.fr/setprefdomain?prefdom=US&sig=K_hnxfvUKhIYYWP6U-
YkC9EB_BCSY%3D', '/intl/fr/policies/privacy/',
'/intl/fr/policies/terms/']},
'https://google.com/intl/fr/policies/privacy/':
{'https://google.com/intl/fr/policies/privacy/':
['https://policies.google.com/privacy?hl=fr']},
'https://google.com/intl/fr/policies/terms/':
{'https://google.com/intl/fr/policies/terms/':
['https://policies.google.com/terms?hl=fr']}}
```

A la fin de cette expérience, rendez votre fichier notebook et sa version pdf !!!