

▼ Naver 뉴스 기사 크롤링 코드

▼ 필수 라이브러리 설치

```

1 # 필수 라이브러리 설치
2 !pip install selenium

1 %%shell
2 # Ubuntu no longer distributes chromium-browser outside of snap
3 #
4 # Proposed solution: https://askubuntu.com/questions/1204571/how-to-install-chromium-without-snap
5
6 # Add debian buster
7 cat > /etc/apt/sources.list.d/debian.list <<'EOF'
8 deb [arch=amd64 signed-by=/usr/share/keyrings/debian-buster.gpg] http://deb.debian.org/debian buster main
9 deb [arch=amd64 signed-by=/usr/share/keyrings/debian-buster-updates.gpg] http://deb.debian.org/debian buster-updates main
10 deb [arch=amd64 signed-by=/usr/share/keyrings/debian-security-buster.gpg] http://deb.debian.org/debian-security buster/updates
11 EOF
12
13 # Add keys
14 apt-key adv --keyserver keyserver.ubuntu.com --recv-keys DCC9EFBF77E11517
15 apt-key adv --keyserver keyserver.ubuntu.com --recv-keys 648ACFD622F3D138
16 apt-key adv --keyserver keyserver.ubuntu.com --recv-keys 112695A0E562B32A
17
18 apt-key export 77E11517 | gpg --dearmor -o /usr/share/keyrings/debian-buster.gpg
19 apt-key export 22F3D138 | gpg --dearmor -o /usr/share/keyrings/debian-buster-updates.gpg
20 apt-key export E562B32A | gpg --dearmor -o /usr/share/keyrings/debian-security-buster.gpg
21
22 # Prefer debian repo for chromium* packages only
23 # Note the double-blank lines between entries
24 cat > /etc/apt/preferences.d/chromium.pref << 'EOF'
25 Package: *
26 Pin: release a=eoan
27 Pin-Priority: 500
28
29
30 Package: *
31 Pin: origin "deb.debian.org"
32 Pin-Priority: 300
33
34
35 Package: chromium*
36 Pin: origin "deb.debian.org"
37 Pin-Priority: 700
38 EOF
39
40 # Install chromium and chromium-driver
41 apt-get update
42 apt-get install chromium chromium-driver

```

▼ 라이브러리 import

```

1 from selenium import webdriver
2 from selenium.common.exceptions import NoSuchElementException
3 from selenium.webdriver.common.by import By
4 from selenium.webdriver.common.keys import Keys
5 from bs4 import BeautifulSoup
6 import pandas as pd
7 import requests
8 import time

```

▼ page scraping 함수

```

1 def safe_find_element(driver, by, value):
2     try:
3         return driver.find_element(by, value)
4     except NoSuchElementException:
5         return None

```

```

5
6
7 def news_scraping(news_url, driver):
8     # 언론사
9     press_element = safe_find_element(driver, By.XPATH, '//*[@id="ct"]/div[1]/div[1]/a/img[2]')
10    press = press_element.get_attribute('title') if press_element else ""
11
12    # 기사 제목
13    title_element = safe_find_element(driver, By.ID, 'title_area')
14    title = title_element.text if title_element else ""
15
16    # 발행일자
17    date_time_element = safe_find_element(driver, By.XPATH, '//*[@id="ct"]/div[1]/div[3]/div[1]/div/span')
18    date_time = date_time_element.text if date_time_element else ""
19
20    # 기자
21    repoter_element = safe_find_element(driver, By.XPATH, '//*[@id="JOURNALIST_CARD_LIST"]/div[1]/div/div[1]/div/div/div[1]/a[2]')
22    repoter = repoter_element.text if repoter_element else ""
23
24    # 기사 본문
25    article_element = safe_find_element(driver, By.ID, 'dic_area')
26    article = article_element.text.replace("\n", "").replace("\t", "") if article_element else ""
27
28    # 기사 반응: 쏠쏠정보
29    useful_element = safe_find_element(driver, By.XPATH, '//*[@id="likeItCountViewDiv"]/ul/li[1]/a/span[2]')
30    useful = useful_element.text if useful_element else ""
31
32    # 기사 반응: 흥미진진
33    wow_element = safe_find_element(driver, By.XPATH, '//*[@id="likeItCountViewDiv"]/ul/li[2]/a/span[2]')
34    wow = wow_element.text if wow_element else ""
35
36    # 기사 반응: 공감백배
37    touched_element = safe_find_element(driver, By.XPATH, '//*[@id="likeItCountViewDiv"]/ul/li[3]/a/span[2]')
38    touched = touched_element.text if touched_element else ""
39
40    # 기사 반응: 분석탁월
41    analytical_element = safe_find_element(driver, By.XPATH, '//*[@id="likeItCountViewDiv"]/ul/li[4]/a/span[2]')
42    analytical = analytical_element.text if analytical_element else ""
43
44    # 기사 반응: 후속강추
45    recommend_element = safe_find_element(driver, By.XPATH, '//*[@id="likeItCountViewDiv"]/ul/li[5]/a/span[2]')
46    recommend = recommend_element.text if recommend_element else ""
47
48    print("뉴스:", [title, press, date_time, repoter, article, useful, wow, touched, analytical, recommend, news_url])
49
50    return [title, press, date_time, repoter, article, useful, wow, touched, analytical, recommend, news_url]
51
52 def scraping(list_url):
53     driver.implicitly_wait(3)
54
55     news_idx = 1
56     news_df = pd.DataFrame(columns = ("Title", "Press", "DateTime", "Repoter", "Article", "Useful", "Wow", "Touched", "Analytical", "Recommend"))
57
58     for url in list_url:
59         driver.get(url)
60         news_df.loc[news_idx] = news_scraping(url, driver)
61         news_idx += 1
62
63     driver.close()
64
65     return news_df

```

▼ 검색 키워드, 크롤링 페이지 설정

검색창에 검색하고자 하는 키워드 입력 하고, 수집할 페이지는 1에서 2 또는 3페이지 정도로 하시면 최신자료를 수집할 수 있습니다.

```

1 def make_pg_num(num):
2     """Calculate the page number in the format required by the website."""
3     return num if num == 1 else num+9*(num-1)
4
5 def create_url(search, page_num):
6     """Create a URL with the search term and page number."""
7     return f"https://search.naver.com/search.naver?where=news&sm=tab_pge&query={search}&sort=0&photo=0&field=0&pd=0&ds=&de=&clu=0"
8
9 def make_urls(search, start_pg, end_pg):

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```

10 """Generate the URLs for the range of pages."""
11 return [create_url(search, make_pg_num(i)) for i in range(start_pg, end_pg+1)]
12
13 def input_with_validation(prompt):
14     """Ask for input with the given prompt, repeating until a valid integer is provided."""
15     while True:
16         try:
17             return int(input(prompt))
18         except ValueError:
19             print("Invalid input, please enter an integer.")
20
21 def main():
22     search = input("검색 키워드를 입력해주세요: ")
23
24     start_pg = input_with_validation("\n크롤링 시작 페이지를 입력해주세요. ex)1(숫자만 입력): ")
25     print(f"\n크롤링 시작 페이지: {start_pg}페이지")
26
27     end_pg = input_with_validation("\n크롤링 종료 페이지를 입력해주세요. ex)1(숫자만 입력): ")
28     print(f"\n크롤링 종료 페이지: {end_pg}페이지")
29
30     return make_urls(search, start_pg, end_pg)
31
32 if __name__ == "__main__":
33     search_urls = main()
34     print("생성된 URL: ", search_urls)
35
36 #Chrome drive option 설정
37 chrome_options = webdriver.ChromeOptions()
38
39 chrome_options.add_argument('--verbose')
40 chrome_options.add_argument('--no-sandbox')
41 chrome_options.add_argument('--headless')
42 chrome_options.add_argument('--disable-gpu')
43 chrome_options.add_argument('--window-size=1920, 1200')
44 chrome_options.add_argument('--disable-dev-shm-usage')
45
46 driver = webdriver.Chrome(options = chrome_options)

```

▼ 기사 링크 수집

```

1 # Initialize the list to store the links
2 list_url = []
3
4 # Iterate over the URLs
5 for url in search_urls:
6     # Send GET request to the web page
7     response = requests.get(url)
8
9     # If the request is successful, extract the HTML content and create a BeautifulSoup object
10    if response.status_code == 200:
11        soup = BeautifulSoup(response.content, "html.parser")
12        links = soup.select("a.info, a.sub_txt") # Select both "a.info" and "a.sub_txt" elements
13
14        # Filter and save the links with "naver.com" in their address
15        for link in links:
16            href = link.get("href")
17            if "naver.com" in href:
18                list_url.append(href)
19    else:
20        print("The request failed.")
21
22    # Sleep for 1 second
23    time.sleep(2)

```

1 list_url

▼ 크롤링 실행

```

1 news_df = scraping(list_url)

1 news_df.to_excel("news.xlsx")

```

▼ OpenAI API 연동

```
1 pip install openai
```

▼ word를 다룰 수 있는 라이브러리 설치

```
1 pip install python-docx
```

▼ GPT 기사 분석: 대화형

대화를 통해 자유롭게 묻고 답할 수 있다.

GPT에게 유능한 저널리스트이자 텍스트 분석 전문가라는 역할을 부여함.

```
1 import os
2 import openai
3 import pandas as pd
4 from docx import Document
5
6 # Assuming that you have the DataFrame 'news_df' already loaded
7 def ask_from_article(index):
8     article = news_df['Article'][index]
9
10    openai.api_key = "여기에 openai에서 발급받은 api key를 붙여넣기 하세요."
11
12    # 역할 부여(유능한 기자이자, 텍스트 분석 전문가)
13    messages = [
14        {"role": "system", "content": "You are a very competent journalist and text analytics expert who needs to do the follow"},
15        {"role": "user", "content": f"Here is an article: {article}"}
16    ]
17
18    while True:
19        user_content = input("기사에 대한 질문을 입력하세요. : ")
20        if user_content.lower() == "종료":
21            break
22        messages.append({"role": "user", "content": f"{user_content}"})
23
24        completion = openai.ChatCompletion.create(
25            model = "gpt-3.5-turbo",
26            messages = messages
27        )
28
29        assistant_content = completion.choices[0].message["content"].strip()
30
31        messages.append({"role": "assistant", "content": f"{assistant_content}"})
32
33        print(f"GPT-3.5 Turbo : {assistant_content}")
34
35    # Saving the conversation to a word file
36    doc = Document()
37    for message in messages:
38        doc.add_paragraph(f"{message['role']} : {message['content']}")
39    doc.save("대화기록.docx")
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```
8      # Replace this with your own logic to retrieve the article content from `news_df`
9      return news_df['Article'].iloc[index]
10
11 def summarize_article(index, doc):
12     try:
13         article = get_article_content(index)
14
15         openai.api_key = "여기에 openai에서 발급받은 api key를 붙여넣기 하세요."
16
17         # 역할 부여(유능한 기자이자, 텍스트 분석 전문가)
18         messages = [
19             {"role": "system", "content": "You are a very competent journalist and text analytics expert who needs to do the follow"},
20             {"role": "user", "content": f"You should briefly summarize the article and write your answer in Korean. You should also"}
21         ]
22
23         completion = openai.ChatCompletion.create(
24             model = "gpt-3.5-turbo",
25             messages = messages
26         )
27
28         assistant_content = completion.choices[0].message["content"].strip()
29
30         print(f"Summary of article {index}: {assistant_content}")
31
32         # Adding the summary to the Word document
33         doc.add_paragraph(f"Summary of article {index}: {assistant_content}")
34
35     except Exception as e:
36         print(f"Error processing article {index}: {str(e)}")
37
38 # Create the Word document
39 doc = Document()
40
41 # Call function for each article with a 20 second delay
42 for i in range(len(news_df['Article'])):
43     summarize_article(i, doc)
44     time.sleep(20)
45
46 # Save the Word document
47 doc.save("summaries.docx")
```