Case Study (Wiki Summarisation & Paraphrasing)

Introduction:

This task will involve using the Wikipedia API to access content from a specific Wikipedia page and then applying OpenAI's GPT-3.5 Turbo for summarization and paraphrasing. It's an excellent opportunity to showcase your skills in integrating APIs, handling user input, and implementing AI-based text processing. Use python programming language.Task

Steps:

Set Up the Environment: Begin by installing the `Wikipedia-API` package in Python. Use the command `pip install Wikipedia-API`. This tool will be your gateway to fetching data from Wikipedia.

Choose a Wikipedia Page: Select a Wikipedia page that interests you or is relevant to the task. This page will serve as the text corpus for your assignment.

This step will be taking the input from user based on his or her intrest

Retrieve and Display Sections: Use the Wikipedia-API to extract and list the different sections available in the chosen Wikipedia page. Your script should display these sections in a clear, user-friendly format.

```
In [1]:  #Retrieve and Display Sections:

         import wikipediaapi

         headers = {
             'User-Agent': 'Your-User-Agent-String',
         }

         wiki = wikipediaapi.Wikipedia('en', headers=headers)
         page = wiki.page(input())
         sections = page.sections
         print(f"Sections of {page.title}:")
         for i, section in enumerate(sections, 1):
             print(f"{i}. {section.title}")

         Elon Musk
         Sections of Elon Musk:
         1. Early life and education
         2. Business career
         3. Other activities
         4. Wealth
         5. Personal views and Twitter usage
         6. Personal life
         7. Public perception
         8. Notes and references
         9. Works cited
         10. Further reading
         11. External links
```

User Input for Section Selection: Create a simple interface to allow the user to select one of the displayed sections. You can also take the input from the user in the form of numbers. Your script should be able to handle this input and fetch the corresponding text.

```
In [2]: #User Input for Section Selection:

       user_input = input("Enter the number of the section you want to summarize and paraphrase: ")
       try:
           section_number = int(user_input)
           if 1 <= section_number <= len(sections):
               section = sections[section_number - 1]
               section_text = section.text
               print(f"You selected section {section_number}: {section.title}")
               print(f"Section text:\n{section_text}")
           else:
               print(f"Invalid input. Please enter a number between 1 and {len(sections)}.")
       except ValueError:
           print(f"Invalid input. Please enter a number, not a word or a symbol.")
```

```
Enter the number of the section you want to summarize and paraphrase: 7
You selected section 7: Public perception
Section text:
Though his ventures were influential within their own industries in the 2000s, Musk only became a public figure in the early 20
10s. He has been described as an eccentric who makes spontaneous and controversial statements, contrary to other billionaires w
ho prefer reclusiveness to protect their businesses. Vance described people's opinions of Musk as polarized due to his "part ph
ilosopher, part troll" role on Twitter.Musk was a partial inspiration for the characterization of Tony Stark in the Marvel film
Iron Man (2008). Musk also had a cameo appearance in the film's 2010 sequel, Iron Man 2. Musk has made cameos and appearances i
n other films such as Machete Kills (2013), Why Him? (2016), and Men in Black: International (2019). Television series in which
he has appeared include The Simpsons ("The Musk Who Fell to Earth", 2015), The Big Bang Theory ("The Platonic Permutation", 201
5), South Park ("Members Only", 2016), Young Sheldon ("A Patch, a Modem, and a Zantac®", 2017), Rick and Morty ("One Crew over
the Crewco0's Morty", 2019), and Saturday Night Live (2021). He contributed interviews to the documentaries Racing Extinction
(2015) and the Werner Herzog-directed Lo and Behold (2016).Musk was elected a Fellow of the Royal Society (FRS) in 2018. In 201
5, he received an honorary doctorate in engineering and technology from Yale University and IEEE Honorary Membership. Awards fo
r his contributions to the development of the Falcon rockets include the American Institute of Aeronautics and Astronautics Geo
rge Low Transportation Award in 2008. the Fédération Aéronautique Internationale Gold Space Medal in 2010. and the Roval Aerona
```

Summarize the Selected Section: Utilize GPT-3.5 Turbo to generate a concise summary of the text from the user-selected section. This step demonstrates your ability to integrate AI for text summarization.

```
In [3]: #Summarize the Selected Section:
       import openai

       openai.api_key = "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"

       response = openai.ChatCompletion.create(
           model="gpt-3.5-turbo",
           messages=[
               {"role": "system", "content": "You are my personal assistant, summarize the text"},
               {"role": "user", "content": section_text}
           ],max_tokens=150
       )

       summary = response["choices"][0]["message"]["content"]
       print(f"Summary:\n{summary}")
```

```
Summary:
Elon Musk is a prominent figure in the business and technology industries. Though he gained public attention in the early 2010
s, his ventures in the 2000s were influential within their respective fields. Musk is known for his eccentric persona and makin
g spontaneous and controversial statements, setting him apart from other billionaires who tend to be more private. This has led
to polarized opinions about him, with some viewing him as a philosopher and others as a troll. Musk has made cameo appearances
in various films and television shows, including the Iron Man series and Saturday Night Live. He has also been featured in docu
mentaries and has received numerous awards for his contributions to rocket development. Musk has been listed as one of the most
influential people in the world multiple times by
```

Paraphrase the Summary: Further, use GPT-3.5 Turbo to paraphrase this summary. The aim is to rewrite the summarized content with different wording while preserving the original meaning, showcasing your application of AI in text transformation.

```
In [7]: #Paraphrase the Summary:

       import openai

       openai.api_key = "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"

       summary_to_paraphrase = summary

       response_paraphrase = openai.ChatCompletion.create(
           model="gpt-3.5-turbo",
           messages=[
               {"role": "system", "content": "You are my personal assistant."},
               {"role": "user", "content": f"Paraphrase the following summary:\n{summary_to_paraphrase}"},
           ],max_tokens=150
       )

       paraphrased_summary = response_paraphrase["choices"][0]["message"]["content"]
       print(f"Paraphrased Summary:\n{paraphrased_summary}")
```

```
Paraphrased Summary:
Salman Khan, also known as Abdul Rashid Salim Salman Khan, is the eldest child of screenwriter Salim Khan and his first wife Su
shila Charak. He was born on December 27, 1965, and was raised in a household that embraced both Muslim and Hindu beliefs. Khan
had a strained relationship with his father when Salim married actress Helen in 1981, but they eventually reconciled. It is bel
ieved that Khan's great-grandparents migrated from Afghanistan to Indore State, British India in the mid-1800s, and they are th
ought to be Alakozai Pashtuns. However, there are also suggestions that his ancestors belonged to the Akuzai sub-tribe of the Y
usuf
```

An Example

-The user will Enter the Page Name, eg: Albert Einstein
(https://en.wikipedia.org/wiki/Albert_Einstein).

-You need to fetch the sections of this page. The sections of this page in this particular example are _Life and career, Scientific career,Non-scientific legacy,In popular culture,Awards and honors, Publications etc._

-Ask the user to select a section, such as Life and Career.

-Use GPT 3.5 Turbo to summarise this section and also paraphrase this section.

Appendix

Begin by registering with OpenAI. Upon registration, you will receive a $5 credit for use on their API services. It's crucial for this task to utilize exclusively the GPT-3.5 Turbo model due to its advanced capabilities essential for the assignment.
Help is available online. Use it.