Article Summarizer - NLP Project

INTRODUCTION:

This tool summarizes lengthy articles using state-of-the-art Natural Language Processing (NLP) models such as Facebook's BART. It's helpful for quickly generating concise summaries of large documents or articles.

REQUIREMENTS:

- Python 3.6+
- transformers
- torch

Install with:

pip install transformers torch

HOW IT WORKS:

- The script uses a pre-trained summarization model from Hugging Face Transformers.
- If the article is longer than the model's input limit, it's processed in chunks.
- It returns a final concise summary in natural language.

SAMPLE USAGE:

1. Run the script.
2. Paste the article when prompted.
3. Get the summary printed on screen.

PYTHON CODE:

```
from transformers import pipeline

def summarize_article(article_text, max_length=150, min_length=40):
```

```
    """
    Summarizes the input article text using a pre-trained transformer model.

    Args:
        article_text (str): The full text of the article.
        max_length (int): Maximum length of the summary.
        min_length (int): Minimum length of the summary.

    Returns:
        str: Summarized text.
    """
    summarizer = pipeline("summarization", model="facebook/bart-large-cnn")

    # If the article is very long, split it into chunks
    if len(article_text) > 1024:
        print("Article is long, summarizing in chunks...")
        paragraphs = [article_text[i:i+1024] for i in range(0, len(article_text), 1024)]
        summary = ""
        for para in paragraphs:
                        sum_para  =  summarizer(para,  max_length=max_length,  min_length=min_length,
do_sample=False)[0]['summary_text']
            summary += sum_para + " "
        return summary.strip()
    else:
                summary  =  summarizer(article_text,  max_length=max_length,  min_length=min_length,
do_sample=False)
        return summary[0]['summary_text']

# Example usage
if __name__ == "__main__":
    print("=== ARTICLE SUMMARIZER ===")
    article = input("Paste the article content here:\n\n")
    print("\n--- Generating Summary ---\n")
    summary = summarize_article(article)
    print("SUMMARY:\n", summary)
```