AI and Python - Ollama for Local LLM AI Usage

Setup

Install Ollama on Your System
```
https://ollama.com/
```

Install Python Module
```
python3 -m pip install ollama
```

AI Chat

This lab allows you to chat with Ollama using the command prompt. We simply accept the user input and then print out the response from Ollama. If you have a slower system you may want to use the phi model instead of llama2.

lab-chat.py
```python
import ollama

def ai(query):
    response = ollama.chat(model='llama2:7b', messages=[
        {
            'role': 'system',
            'content': 'you are a friend',
        },
        {
            'role': 'user',
            'content': 'limit to 50 words',
        },
        {
            'role': 'user',
            'content': query,
        },
    ])

    answer = response['message']['content']

    return answer

while True:
    query = input('--- ')
    response = ai(query)
    print(response)
```

AI Chat with Memory

Ai does not have a memory by default so you must write code to create one. This lab create a basic memory routine so that the AI can remember what you have said before.

We keep adding your inputs into a list, and then submit that list along with our new query to Ollama.

```python
import ollama

memory = []

def ai(query, memory):
    response = ollama.chat(model='llama2:7b', messages=[
        {
            'role': 'system',
            'content': 'you are a friend',
        },
        {
            'role': 'user',
            'content': 'limit to 50 words',
        },
        {
            'role': 'user',
            'content': f'This is our previous conversation {memory}',
        },
        {
            'role': 'user',
            'content': query,
        },
    ])

    answer = response['message']['content']

    return answer

while True:
    query = input('--- ')
    response = ai(query, memory)
    memory.append(query)
    print(response)
```

AI Image Analysis

This lab allows you to ask Ollama to create a Title, Description and Tags for an Image. We then create an HTML document with the image and this information.

```python
import ollama

def ai(image, query):
    response = ollama.chat(
    model='llava',
    messages=[
        {
        'role': 'user',
        'content': query,
        'images': [image],
        },
    ],
    )
    answer = response['message']['content']

    return answer

image = 'image.png'

action = ['Create a Title for this image',
        'Create a description of this image under 50 words',
        'provide 10 tags for this image in CSV format']

data = []
for query in action:
    response = ai(image, query)
    data.append(response)
    print(response)

with open('gallery.htm', 'w') as file:
    file.write(f'<img style="height:300px;width:auto;" src={image}>')
    file.write(f'<h1>{data[0]}</h1>')
    file.write(f'<p>{data[1]}</p>')
    file.write(f'<p><i>{data[2]}</i></p>')
```