

```
!pip install langchain
```

```
!pip install openai
```

```
!pip install gradio
```

```
!pip install huggingface_hub
```

```

Collecting langchain
  Downloading langchain-0.0.248-py3-none-any.whl (1.4 MB)
    1.4/1.4 MB 7.0 MB/s eta 0:00:00
Requirement already satisfied: PyYAML>=5.4.1 in /usr/local/lib/python3.10/dist-packages (from langchain) (6.0.1)
Requirement already satisfied: SQLAlchemy<3,>=1.4 in /usr/local/lib/python3.10/dist-packages (from langchain) (2.0.19)
Requirement already satisfied: aiohttp<4.0.0,>=3.8.3 in /usr/local/lib/python3.10/dist-packages (from langchain) (3.8.5)
Requirement already satisfied: async-timeout<5.0.0,>=4.0.0 in /usr/local/lib/python3.10/dist-packages (from langchain) (4.0.2)
Collecting dataclasses-json<0.6.0,>=0.5.7 (from langchain)
  Downloading dataclasses_json-0.5.14-py3-none-any.whl (26 kB)
Collecting langsmith<0.1.0,>=0.0.11 (from langchain)
  Downloading langsmith-0.0.15-py3-none-any.whl (30 kB)
Requirement already satisfied: numexpr<3.0.0,>=2.8.4 in /usr/local/lib/python3.10/dist-packages (from langchain) (2.8.4)
Requirement already satisfied: numpy<2,>=1 in /usr/local/lib/python3.10/dist-packages (from langchain) (1.22.4)
Collecting openapi-schema-pydantic<2.0,>=1.2 (from langchain)
  Downloading openapi_schema_pydantic-1.2.4-py3-none-any.whl (90 kB)
    90.0/90.0 kB 8.3 MB/s eta 0:00:00
Requirement already satisfied: pydantic<2,>=1 in /usr/local/lib/python3.10/dist-packages (from langchain) (1.10.12)
Requirement already satisfied: requests<3,>=2 in /usr/local/lib/python3.10/dist-packages (from langchain) (2.27.1)
Requirement already satisfied: tenacity<9.0.0,>=8.1.0 in /usr/local/lib/python3.10/dist-packages (from langchain) (8.2.2)
Requirement already satisfied: attrs>=17.3.0 in /usr/local/lib/python3.10/dist-packages (from aiohttp<4.0.0,>=3.8.3->langchain) (23.1.0)
Requirement already satisfied: charset-normalizer<4.0,>=2.0 in /usr/local/lib/python3.10/dist-packages (from aiohttp<4.0.0,>=3.8.3->langchain) (3.2.0)
Requirement already satisfied: multidict<7.0,>=4.5 in /usr/local/lib/python3.10/dist-packages (from aiohttp<4.0.0,>=3.8.3->langchain) (6.0.4)
Requirement already satisfied: yarl<2.0,>=1.0 in /usr/local/lib/python3.10/dist-packages (from aiohttp<4.0.0,>=3.8.3->langchain) (1.9.2)
Requirement already satisfied: frozenlist>=1.1.1 in /usr/local/lib/python3.10/dist-packages (from aiohttp<4.0.0,>=3.8.3->langchain) (1.4.0)
Requirement already satisfied: aiosignal>=1.1.2 in /usr/local/lib/python3.10/dist-packages (from aiohttp<4.0.0,>=3.8.3->langchain) (1.3.1)
Collecting marshmallow<4.0.0,>=3.18.0 (from dataclasses-json<0.6.0,>=0.5.7->langchain)
  Downloading marshmallow-3.20.1-py3-none-any.whl (49 kB)
    49.4/49.4 kB 4.3 MB/s eta 0:00:00
Collecting typing-inspect<1,>=0.4.0 (from dataclasses-json<0.6.0,>=0.5.7->langchain)
  Downloading typing_inspect-0.9.0-py3-none-any.whl (8.8 kB)
Requirement already satisfied: typing-extensions>=4.2.0 in /usr/local/lib/python3.10/dist-packages (from pydantic<2,>=1->langchain) (4.5.0)
Requirement already satisfied: urllib3<1.27,>=1.21.1 in /usr/local/lib/python3.10/dist-packages (from requests<3,>=2->langchain) (2.0.7)
Requirement already satisfied: certifi>=2017.4.17 in /usr/local/lib/python3.10/dist-packages (from requests<3,>=2->langchain) (2023.7.22)
Requirement already satisfied: idna<4,>=2.5 in /usr/local/lib/python3.10/dist-packages (from requests<3,>=2->langchain) (3.4)
Requirement already satisfied: greenlet<=0.4.17 in /usr/local/lib/python3.10/dist-packages (from SQLAlchemy<3,>=1.4->langchain) (0.4.17)
Requirement already satisfied: packaging>=17.0 in /usr/local/lib/python3.10/dist-packages (from marshmallow<4.0.0,>=3.18.0->dataclasses-json<0.6.0,>=0.5.7->langchain) (23.1.0)
Collecting mypy_extensions>=0.3.0 (from typing-inspect<1,>=0.4.0->dataclasses-json<0.6.0,>=0.5.7->langchain)
  Downloading mypy_extensions-1.0.0-py3-none-any.whl (4.7 kB)
Installing collected packages: mypy_extensions, marshmallow, typing-inspect, openapi-schema-pydantic, langsmith, dataclasses-json
Successfully installed dataclasses-json-0.5.14 langchain-0.0.248 langsmith-0.0.15 marshmallow-3.20.1 mypy_extensions-1.0.0 openapi-schema-pydantic-1.2.4
Collecting openai
  Downloading openai-0.27.8-py3-none-any.whl (73 kB)
    73.6/73.6 kB 1.1 MB/s eta 0:00:00
Requirement already satisfied: requests>=2.20 in /usr/local/lib/python3.10/dist-packages (from openai) (2.27.1)
Requirement already satisfied: tqdm in /usr/local/lib/python3.10/dist-packages (from openai) (4.65.0)
Requirement already satisfied: aiohttp in /usr/local/lib/python3.10/dist-packages (from openai) (3.8.5)
Requirement already satisfied: urllib3<1.27,>=1.21.1 in /usr/local/lib/python3.10/dist-packages (from requests>=2.20->openai) (2.0.7)
Requirement already satisfied: certifi>=2017.4.17 in /usr/local/lib/python3.10/dist-packages (from requests>=2.20->openai) (2023.7.22)
Requirement already satisfied: charset-normalizer<4,>=2.0 in /usr/local/lib/python3.10/dist-packages (from requests>=2.20->openai) (3.2.0)
Requirement already satisfied: idna<4,>=2.5 in /usr/local/lib/python3.10/dist-packages (from requests>=2.20->openai) (3.4)
Requirement already satisfied: attrs>=17.3.0 in /usr/local/lib/python3.10/dist-packages (from aiohttp->openai) (23.1.0)
Requirement already satisfied: multidict<7.0,>=4.5 in /usr/local/lib/python3.10/dist-packages (from aiohttp->openai) (6.0.4)
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Requirement already satisfied: yarl<2.0,>=1.0 in /usr/local/lib/python3.10/dist-packages (from aiohttp->openai) (1.9.2)
Requirement already satisfied: frozenlist>=1.1.1 in /usr/local/lib/python3.10/dist-packages (from aiohttp->openai) (1.4.0)
Requirement already satisfied: aiosignal>=1.1.2 in /usr/local/lib/python3.10/dist-packages (from aiohttp->openai) (1.3.1)
Installing collected packages: openai

```

```
prompt = PromptTemplate(
    input_variables=["chat_history", "user_message"], template=template
)

memory = ConversationBufferMemory(memory_key="chat_history")
```

- Similar to Open AI Model we can also use HuggingFace Transformer Models.
- Reference links: <https://python.langchain.com/docs/integrations/providers/huggingface>, https://python.langchain.com/docs/integrations/llms/huggingface_hub.html

```
# from langchain.llms import HuggingFacePipeline
# hf = HuggingFacePipeline.from_model_id(
#     model_id="gpt2",
#     task="text-generation",)
```

LLM code part

```
llm_chain = LLMChain(
    llm=ChatOpenAI(temperature='0.5', model_name="gpt-3.5-turbo"),
    prompt=prompt,
    verbose=True,
    memory=memory,
)
```

```
def get_text_response(user_message, history):
    response = llm_chain.predict(user_message = user_message)
    return response
```

Gradio code part

```
demo = gr.ChatInterface(get_text_response, examples=["How are you doing?", "What are your interests?", "Which places do you like to visit?"])
```

```
if __name__ == "__main__":
    demo.launch() #To create a public link, set `share=True` in `launch()`. To enable errors and logs, set `debug=True` in `launch()`.
```

Colab notebook detected. To show errors in colab notebook, set debug=True in launch()
Note: opening Chrome Inspector may crash demo inside Colab notebooks.

To create a public link, set `share=True` in `launch()`.

▼ Publishing your code to Hugging Face

```
from huggingface_hub import notebook_login
```

```
notebook_login()
```

Token is valid (permission: write).

your token has been saved in your configured git credential helpers (sto

Your token has been saved to /root/.cache/huggingface/token

Login successful

```
from huggingface_hub import HfApi
api = HfApi()
```

```
HUGGING_FACE_REPO_ID = "Sivaranjan17/gradiolangchainChatBotSR"
```

Adding Secret Variables in Hugging Face Account:

- Open your Space
- Click on Settings Button
- Checkout to **Variables and secrets** section
- Create New Secrets

Note: Make sure to add your **OPENAI_API_KEY** in Secret key

```
%mkdir /content/ChatBotWithOpenAI
!wget -P /content/ChatBotWithOpenAI/ https://s3.ap-south-1.amazonaws.com/cdn1.ccbp.in/GenAI-Workshop/ChatBotWithOpenAIAndLangChain/app.py
!wget -P /content/ChatBotWithOpenAI/ https://s3.ap-south-1.amazonaws.com/cdn1.ccbp.in/GenAI-Workshop/ChatBotWithOpenAIAndLangChain/requirements.txt
```

```
mkdir: cannot create directory '/content/ChatBotWithOpenAI': File exists
--2023-07-31 18:34:32-- https://s3.ap-south-1.amazonaws.com/cdn1.ccbp.in/GenAI-Workshop/ChatBotWithOpenAIAndLangChain/app.py
Resolving s3.ap-south-1.amazonaws.com (s3.ap-south-1.amazonaws.com)... 52.219.64.33, 52.219.158.77, 52.219.156.141, ...
Connecting to s3.ap-south-1.amazonaws.com (s3.ap-south-1.amazonaws.com)|52.219.64.33|:443... connected.
HTTP request sent, awaiting response... 200 OK
Length: 984 [text/x-python]
Saving to: '/content/ChatBotWithOpenAI/app.py.1'
```

```
app.py.1 100%[=====>] 984 --.-KB/s in 0s
```

```
2023-07-31 18:34:33 (48.9 MB/s) - '/content/ChatBotWithOpenAI/app.py.1' saved [984/984]
```

```
--2023-07-31 18:34:33-- https://s3.ap-south-1.amazonaws.com/cdn1.ccbp.in/GenAI-Workshop/ChatBotWithOpenAIAndLangChain/requirements.txt
Resolving s3.ap-south-1.amazonaws.com (s3.ap-south-1.amazonaws.com)... 52.219.64.33, 52.219.158.77, 52.219.156.141, ...
Connecting to s3.ap-south-1.amazonaws.com (s3.ap-south-1.amazonaws.com)|52.219.64.33|:443... connected.
HTTP request sent, awaiting response... 200 OK
Length: 16 [text/plain]
Saving to: '/content/ChatBotWithOpenAI/requirements.txt.1'
```

```
requirements.txt.1 100%[=====>] 16 --.-KB/s in 0s
```

```
2023-07-31 18:34:34 (598 KB/s) - '/content/ChatBotWithOpenAI/requirements.txt.1' saved [16/16]
```

```
%cd /content/ChatBotWithOpenAI
```

```
api.upload_file(
    path_or_fileobj="./requirements.txt",
    path_in_repo="requirements.txt",
    repo_id=HUGGING_FACE_REPO_ID,
    repo_type="space")
```

```
api.upload_file(
    path_or_fileobj="./app.py",
    path_in_repo="app.py",
    repo_id=HUGGING_FACE_REPO_ID,
    repo_type="space")
```

```
/content/ChatBotWithOpenAI
'https://huggingface.co/spaces/Sivaranjan17/gradiolangchainChatBotSR/blob/main/app.py'
```

