Setup PyCharm IDE

The chatbot code is developed using the PyCharm IDE community edition. PyCharm allows creating Projects. Each project is a virtual environment in which required libraries can be installed. It also has a PythonTerminal from where the server can be run.

Steps	Purpose
Install libraries using Python Packages tab.	Install following libraries, pip install oci pip install oracle-ads pip install langchain pip install chromadb pip install faiss-cpu pip install streamlit pip install python-multipart pip install pydantic pip install pypdf
Setup the Generative AI service access	Download the private key and config files from IAM , User section and copy these to .oci folder in your local home directory.
Create Chroma server	Open demo-chroma-create.py and run it.
Running Chroma Server	To run the chroma server use the following command from a terminal. chroma run --path ./<<path to the chromadb>>
Running Streamlit application	To run the files that use Streamlit use the following command from the terminal, streamlit run <<name of the file>>

Github URL for code

https://github.com/ou-developers/ou-generativeai-pro/tree/main/demos

VM Setup for deploying the Chatbot and test it.

The OU Chatbot can be deployed on the Ubuntu server with 1 OCPUs and 64 GB RAM.

Following steps are followed to setup the environment .

Create VM	Create a VM with Canonical Ubuntu 22.04 image , VM.Standard.E4.Flex Virtual machine, 1 core OCPU, 64 GB memory, 2 Gbps network bandwidth. Download the ssh key for the VM and save it as ubuntu-vm-priv.key
Download IAM user private key and config file to <<local-path>>/.oci directory	Download the IAM user private key and config from OCI account to local machine.
scp to .oci folder using scp.	scp -r -I <<local-path>>/ubuntu-vm-priv.key <local-path>/.oci/* ubuntu@<ip of your vm>:/home/ubuntu/.oci/
login into the server	ssh -i ubuntu-vm-priv.key ubuntu@<ip of your vm>
Create a src folder into the home directory (/home/ubuntu)	mkdir src exit
Copy code and data files –	scp -r -i /<local-path>/ubuntu-vm-priv.key /<local-path>/demo-ou-chatbot-chroma-final.py ubuntu@<ip of your vm>:/home/ubuntu/src/ scp -r -i /<local-path>/ubuntu-vm-priv.key <local-path> /demo-chroma-create.py ubuntu@<ip of your vm>:/home/ubuntu/src/ scp -r -i /<local-path>/ubuntu-vm-priv.key <local-path>/pdf-docs/* ubuntu@<ip of your vm>:/home/ubuntu/src/pdf-docs/
Upgrade Ubuntu packages	sudo apt update && sudo apt upgrade
Install Python	sudo apt install python3
Install Virtual Environment	sudo apt install python3-virtualenv
Create a Virtual Environment	virtualenv <name of the environment> (ouenv in this case)
Activate virtual env	source ouenv/bin/activate
Install necessary python libraries	pip install oci pip install oracle-ads pip install langchain pip install chromadb pip install faiss-cpu pip install streamlit pip install python-multipart

	pip install pydantic pip install pypdf
Setup the firewall to open ports	sudo iptables -I INPUT 6 -m state --state NEW -p tcp --dport 8501 -j ACCEPT
Setup subnet security list to open port 8501.	From Compute select your instance , Select subnet for your instance Select the default security list and add port 8501 for TCP traffic.
Index documents	python3 demo-chroma-create.py
Run Chroma server	nohup chroma run --path ./chromadb >> chroma.log &
Run server that will accept user input and return response	cd src nohup streamlit run demo-ou-chatbot-chroma-final.py &
Test the server	http://<ip addr of the server>:8501