Build an Auto Suggest Engine with Copilot using GitHub

A hands-on lab document for advanced AI Engineers

Introduction

In this document, you will learn how to use GitHub Copilot, an AI-powered code assistant, to create an auto suggest engine that can generate suggestions for queries based on a dataset of questions and answers. You will use Python as the programming language and Flask as the web framework.

GitHub Copilot is a tool that helps you write code faster and smarter by suggesting lines or entire functions for you as you type. It works with a variety of languages and frameworks, and you can use it in Visual Studio Code, a popular code editor. You can learn more about GitHub Copilot at MS Learn.

Prerequisites

Before you start, you will need the following:

- A GitHub account. You can sign up for free here: [URL]
- A Visual Studio Code account. You can download it for free here: [URL]
- The GitHub Copilot extension for Visual Studio Code. You can install it from here: [URL]
- A dataset of questions and answers in JSON format. You can use this sample dataset or create your own: [URL]

Steps

Follow these steps to create your auto suggest engine:

1. Create a new folder on your computer and name it auto_suggest.
2. Open Visual Studio Code and open the auto_suggest folder as a workspace.
3. Create a new file in the folder and name it [URL]. This will be the main file for your web application.
4. In the [URL] file, type the following code to import the necessary modules:
5. import json
6. import random
7. from flask import Flask, request, jsonify
8. Press Ctrl+Enter to run the code. You should see GitHub Copilot suggesting the next line of code for you. If you like the suggestion, press Tab to accept it. If you don't like it, press Esc to dismiss it. You can also use the arrow keys to navigate through different suggestions.
9. Continue typing the code for your [URL] file, using GitHub Copilot as your assistant. You can also refer to the comments in the code for guidance. The final code should look something like this:

```
import json
import random
from flask import Flask, request, jsonify
# load the dataset of questions and answers
with open("[URL]") as f:
data = [URL](f)
# create a list of all the questions in the dataset
questions = [q for q in data["intents"]]
# create a Flask app
app = Flask(__name__)
# define a route for the home page
@[URL]("/")
def home():
return "Welcome to the auto suggest engine!"
# define a route for the suggest API
@[URL]("/suggest")
def suggest():
# get the query parameter from the request
query = [URL]("query")
# if the query is empty, return an empty list
if not query:
return jsonify([])
# otherwise, find the questions that match the query
matches = []
for q in questions:
# if the query is a substring of the question, add it to the matches
if [URL]() in q["tag"].lower():
[URL](q["tag"])
# if there are no matches, return an empty list
if not matches:
return jsonify([])
# otherwise, return a random sample of up to 5 matches
return jsonify([URL](matches, min(5, len(matches))))
# run the app
if __name__ == "__main__":
[URL](debug=True)
```

10. Save the [URL] file and run it by typing python [URL] in the terminal. You should see a message like this:
    * Running on [URL] (Press CTRL+C to quit)
    * Restarting with stat
    * Debugger is active!
    * Debugger PIN: 123-456-789

11. Open a web browser and go to [URL] to see your home page.

12. Go to [URL] to test your suggest API. You can type any query after the equal sign and see the suggestions returned as a JSON array. For example, if you type [URL], you might see something like this:
    [
    "how are you",
    "how old are you",
    "how to get started"
    ]

13. Congratulations! You have successfully created an auto suggest engine with Copilot using GitHub.