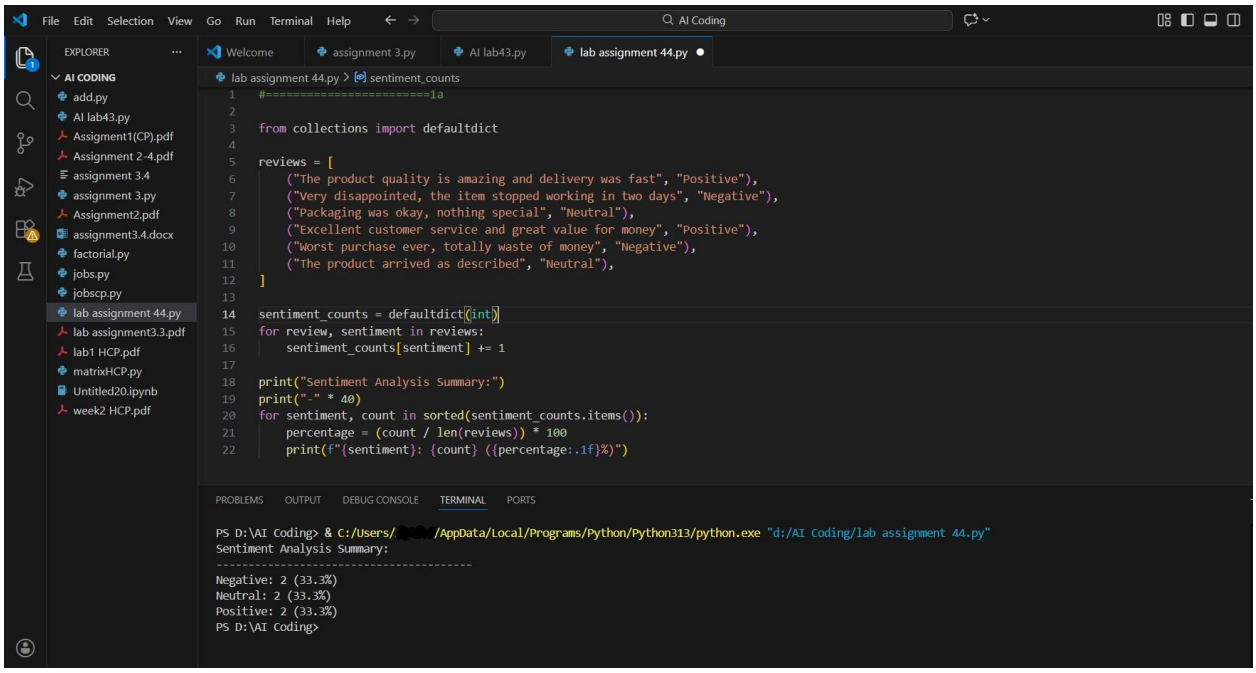
2303a51602

Lab assignment-4.4

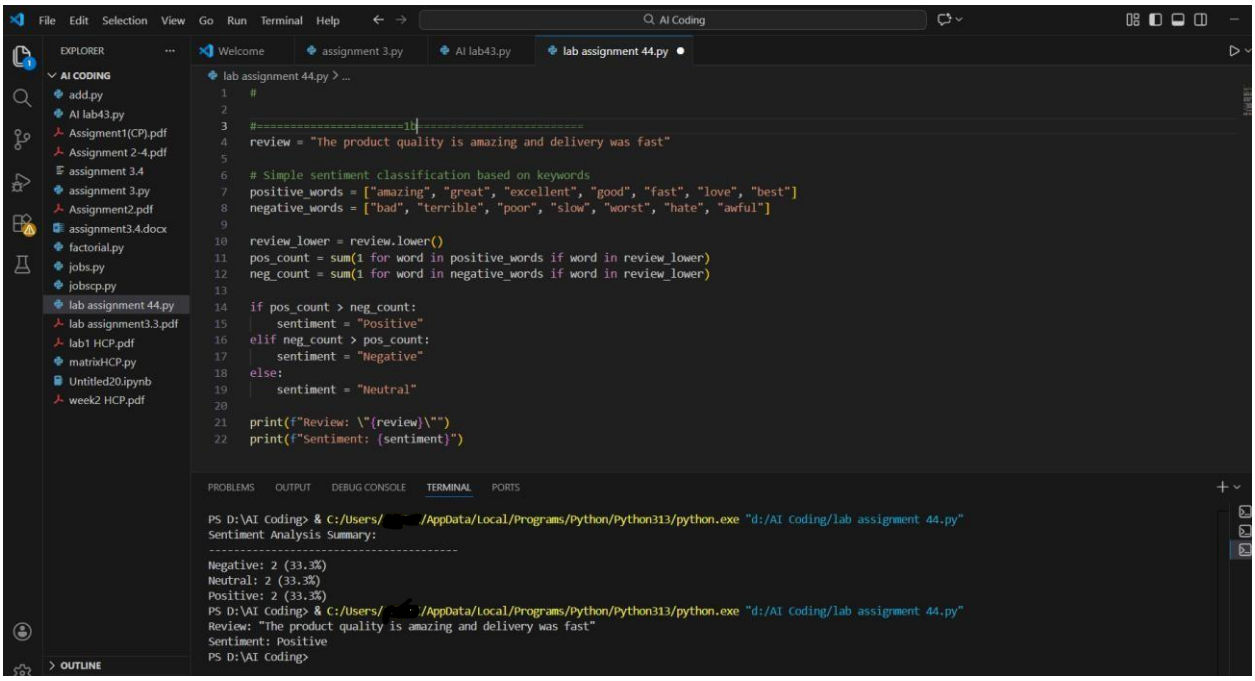
1. Sentiment Classification for Customer Reviews Scenario:
   An e-commerce platform wants to analyze customer reviews and classifythem into Positive, Negative, or Neutral sentiments using prompt engineering

Tasks:

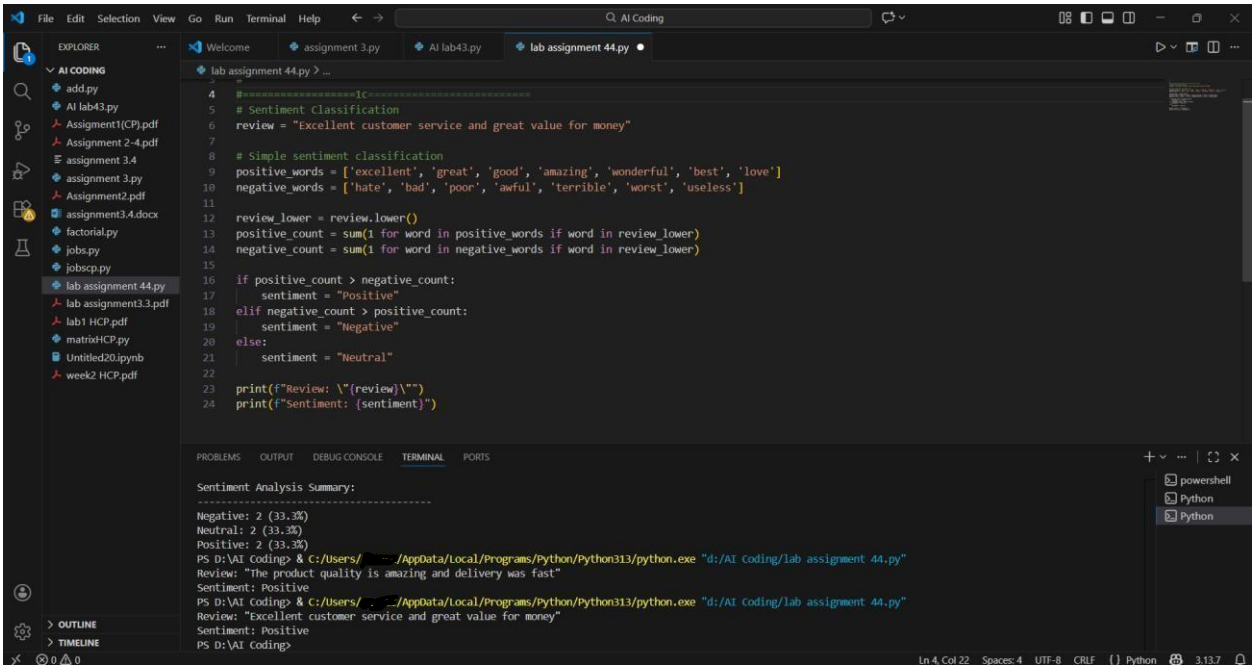
a) Prepare 6 short customer reviews mapped to sentiment labels.



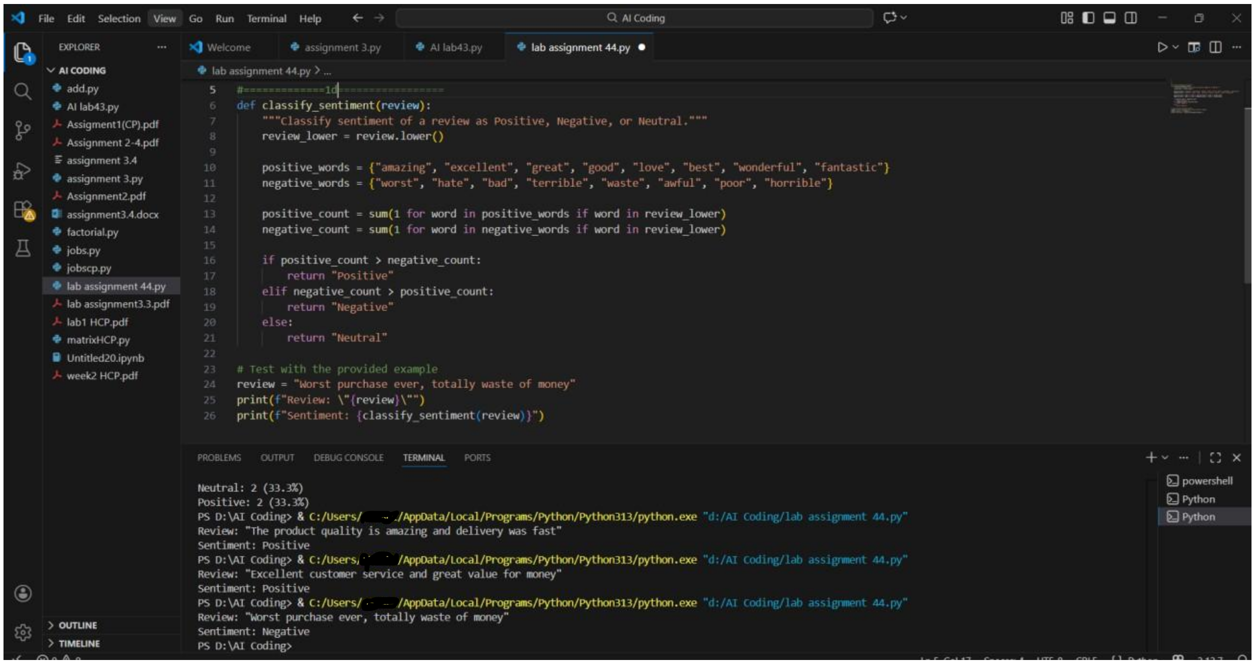
b)Design a Zero-shot prompt to classify sentiment.



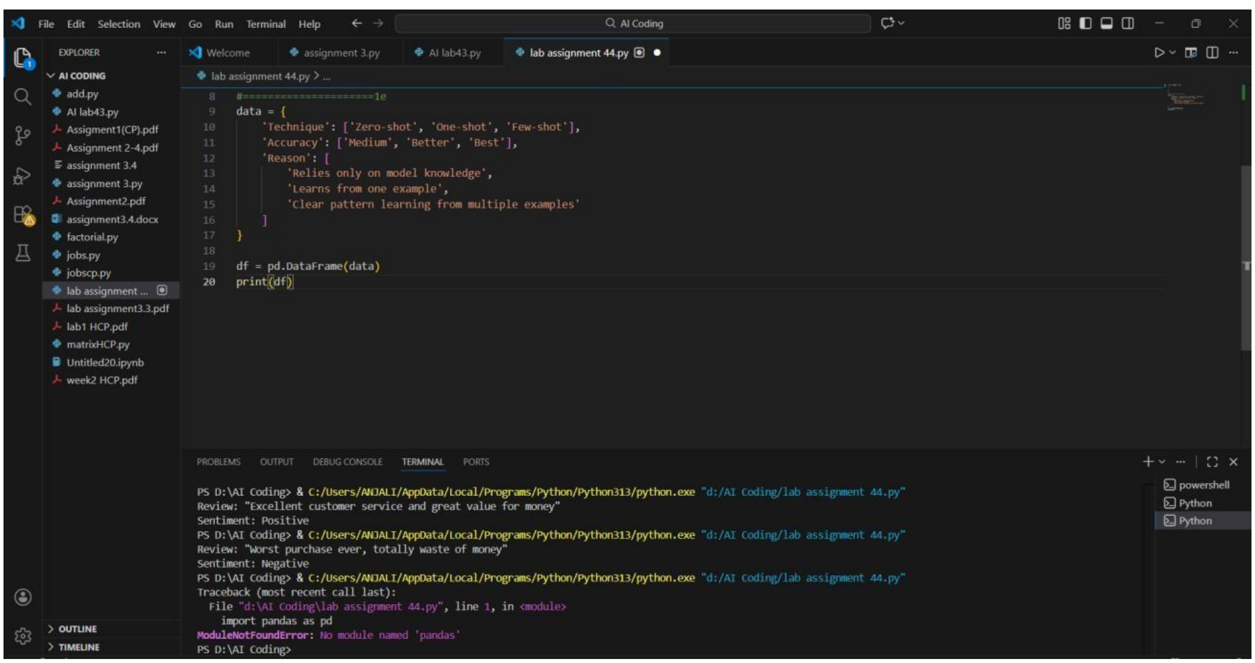
1c) Design a One-shot prompt with one labeled example.



1d) Design a Few-shot prompt with 3–5 labeled examples.



1e) Compare the outputs and discuss accuracy differences.

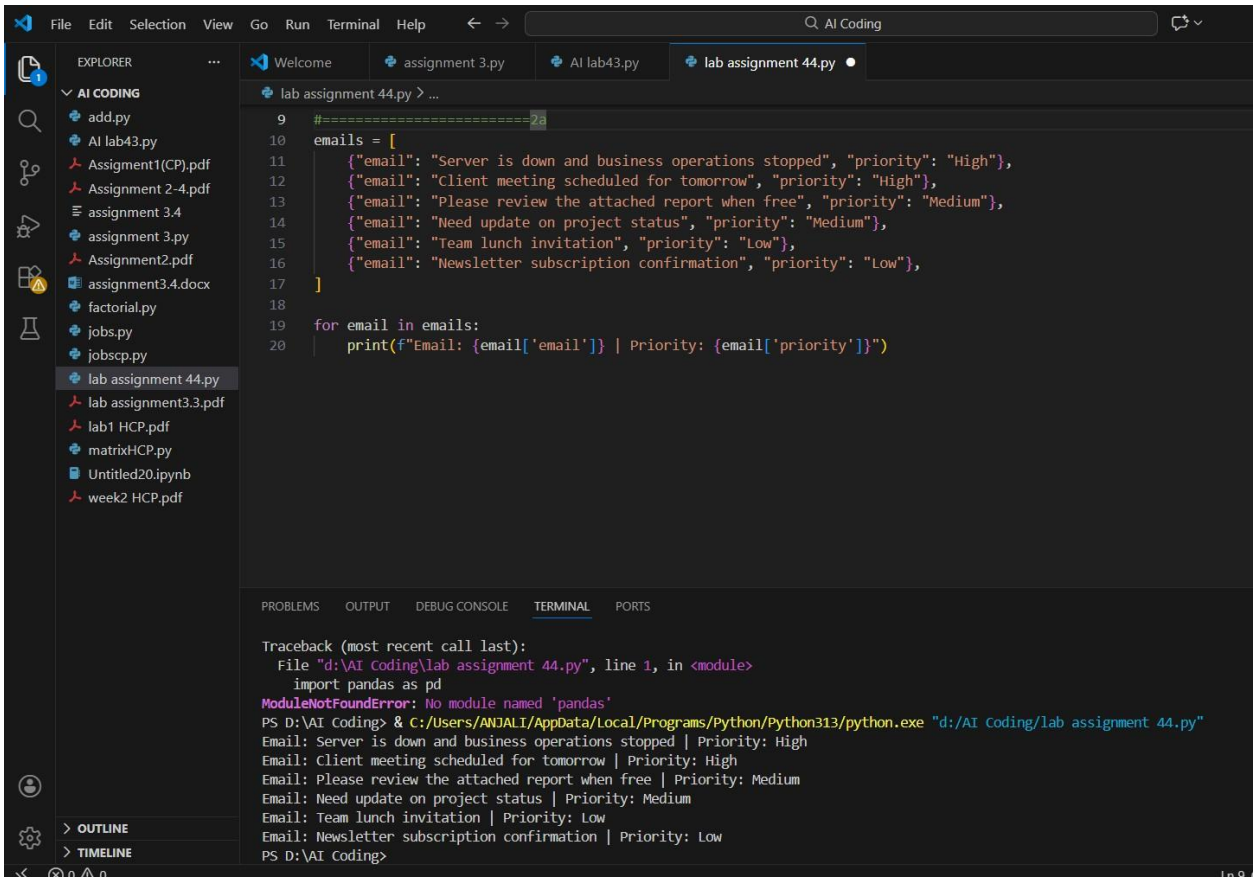


2. **Email Priority Classification**

   Scenario:

   A company wants to automatically prioritize incoming emails into High Priority, Medium Priority, or Low Priority

2a) Create 6 sample email messages with priority labels.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jobs.py
jobscp.py
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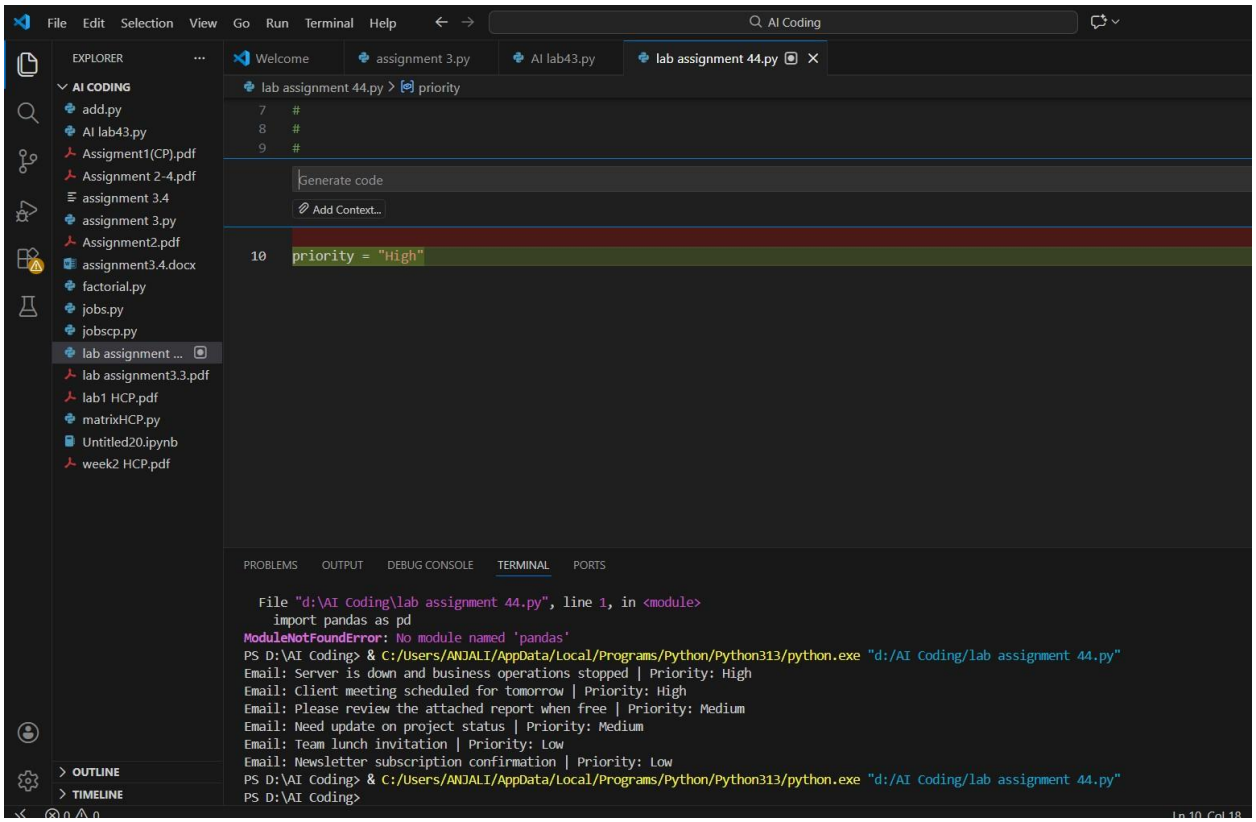
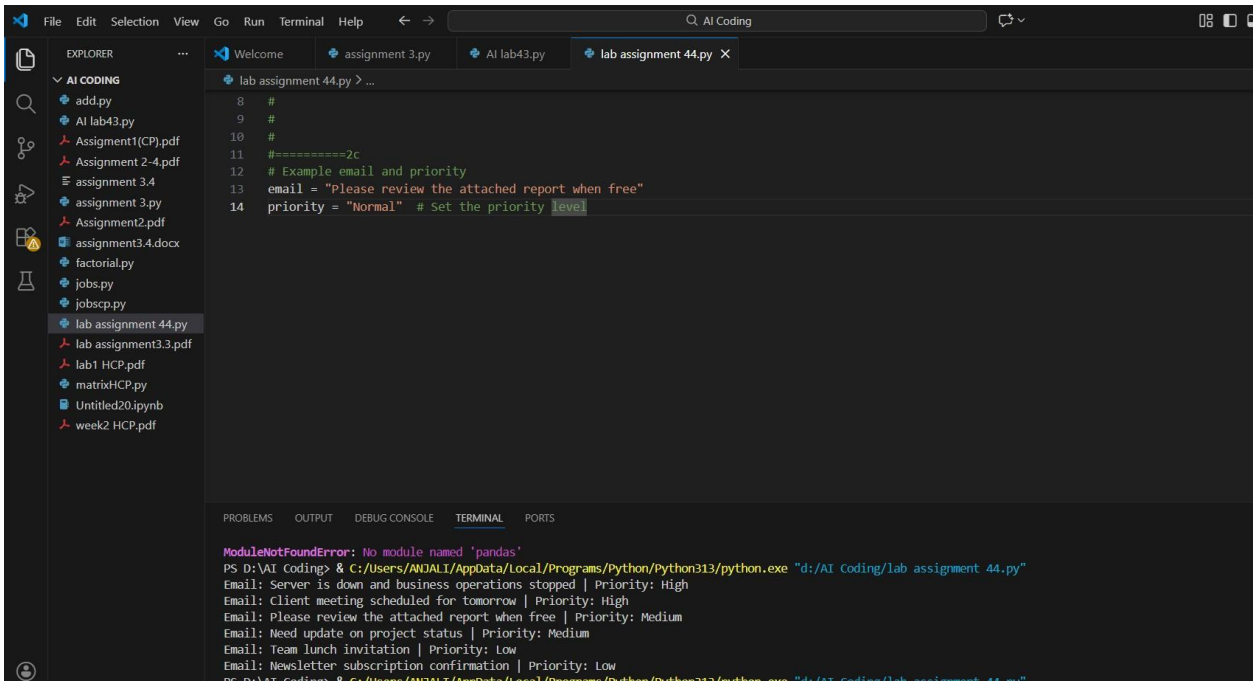
lab assignment3.3.pdf
lab1 HCP.pdf
matrixHCP.py
Untitled20.ipynb
week2 HCP.pdf
OUTLINE
TIMELINE
Welcome
assignment 3.py
AI lab43.py
lab assignment 44.py
lab assignment 44.py > ...
9 #=======================2a
10 emails = [
11 {"email": "Server is down and business operations stopped", "priority": "High"},
12 {"email": "Client meeting scheduled for tomorrow", "priority": "High"},
13 {"email": "Please review the attached report when free", "priority": "Medium"},
14 {"email": "Need update on project status", "priority": "Medium"},
15 {"email": "Team lunch invitation", "priority": "Low"},
16 {"email": "Newsletter subscription confirmation", "priority": "Low"},
17]
18
19 for email in emails:
20 print(f"Email: {email['email']} | Priority: {email['priority']}")
PROBLEMS OUTPUT DEBUG CONSOLE TERMINAL PORTS
Traceback (most recent call last):
File "d:\AI Coding\lab assignment 44.py", line 1, in <module>
import pandas as pd
ModuleNotFoundError: No module named 'pandas'
PS D:\AI Coding> & C:/Users/ANJALI/AppData/Local/Programs/Python/Python313/python.exe "d:/AI Coding/lab assignment 44.py"
Email: Server is down and business operations stopped | Priority: High
Email: Client meeting scheduled for tomorrow | Priority: High
Email: Please review the attached report when free | Priority: Medium
Email: Need update on project status | Priority: Medium
Email: Team lunch invitation | Priority: Low
Email: Newsletter subscription confirmation | Priority: Low
PS D:\AI Coding>

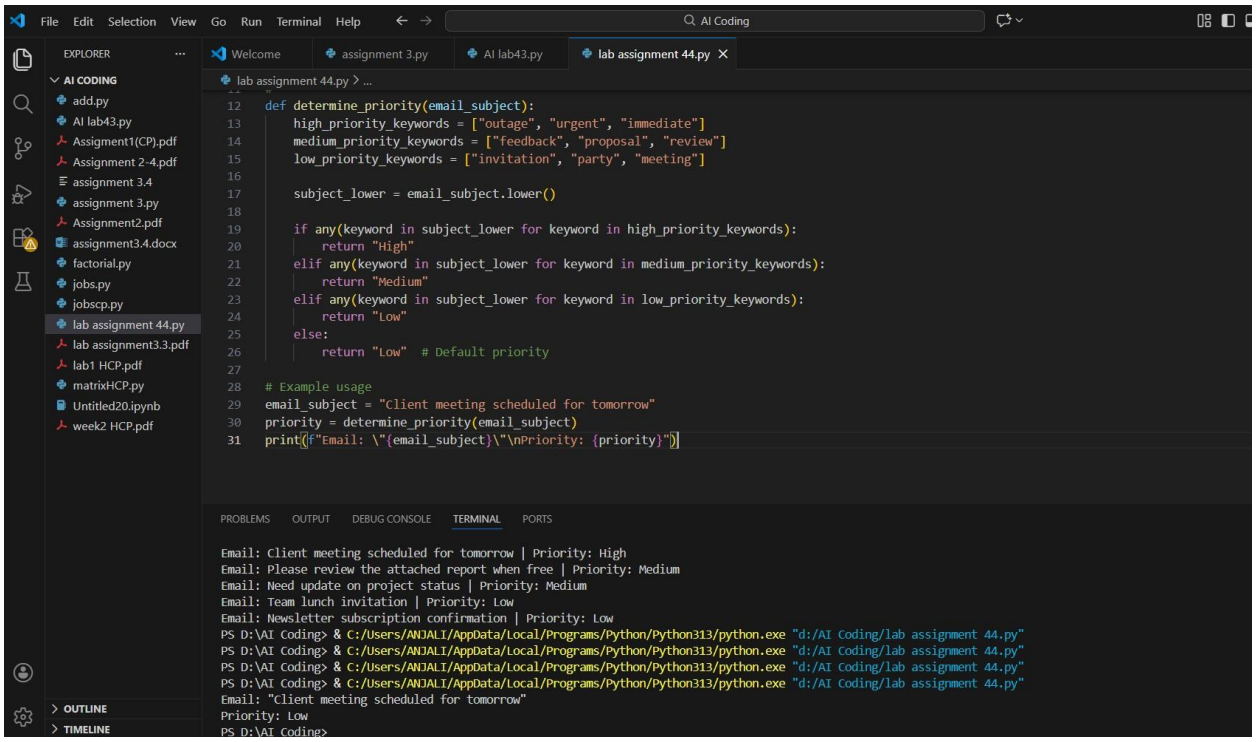
2b) Perform intent classification using Zero-shot prompting



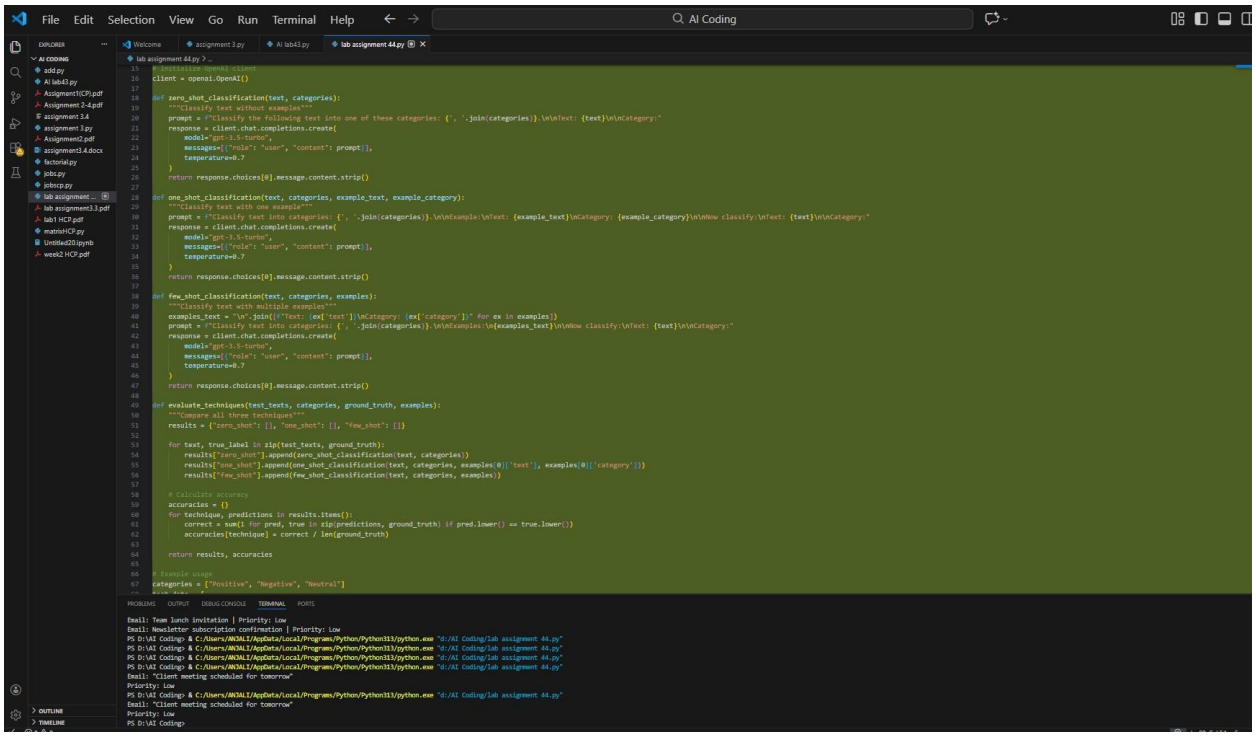
2c) Perform classification using One-shot prompting



2d) Perform classification using Few-shot prompting.



2e) Evaluate which technique produces the most reliable results and why.

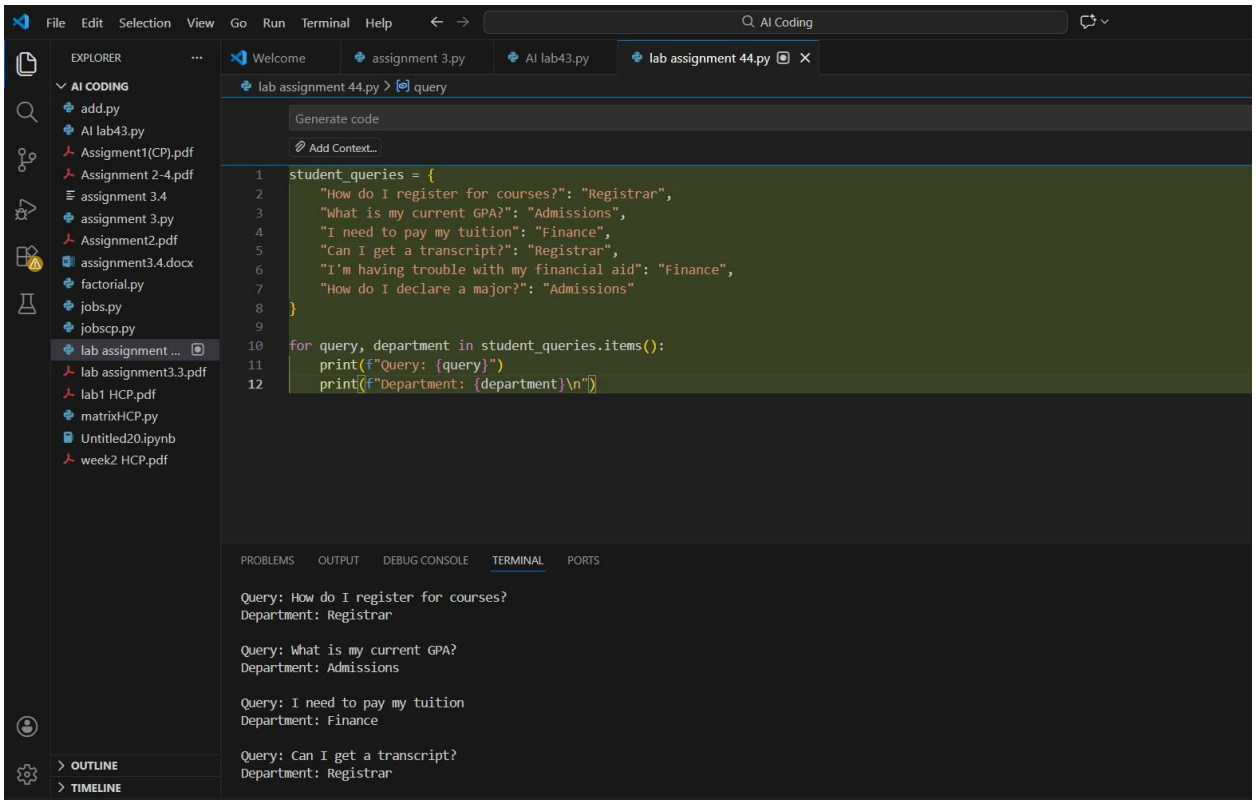


3. Student Query Routing System

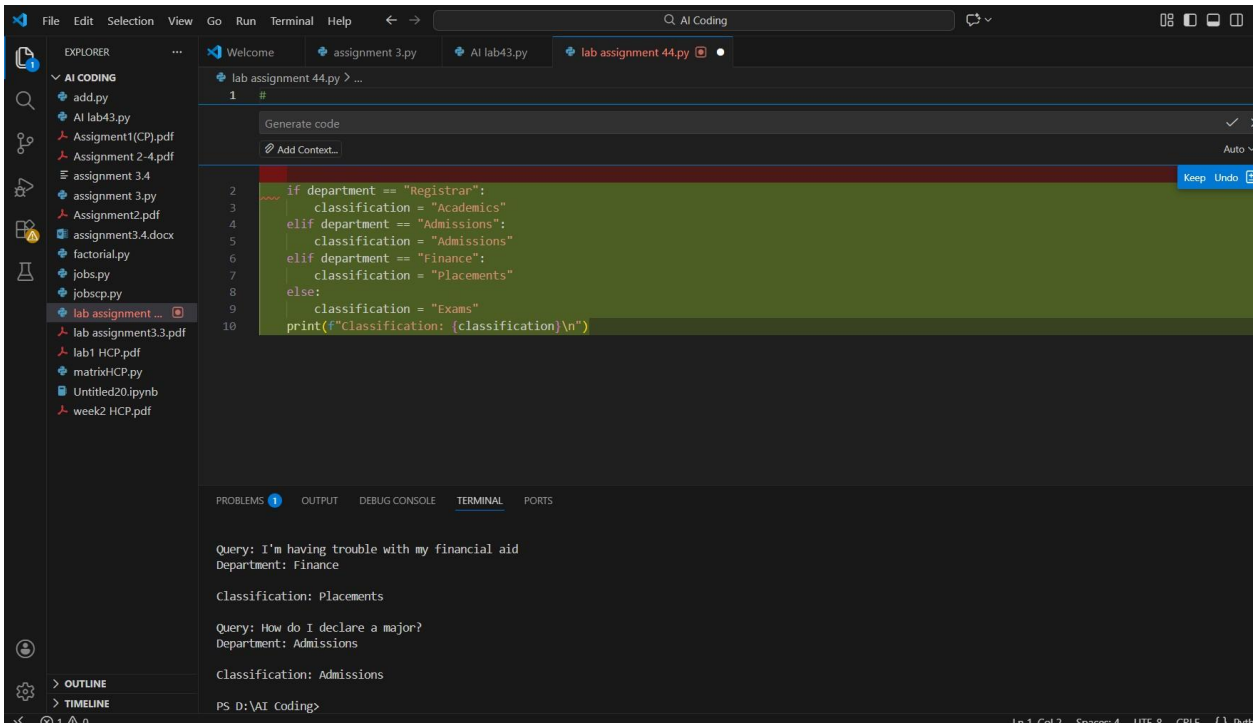
Scenario:

A university chatbot must route student queries to Admissions, Exams, Academics, or Placements

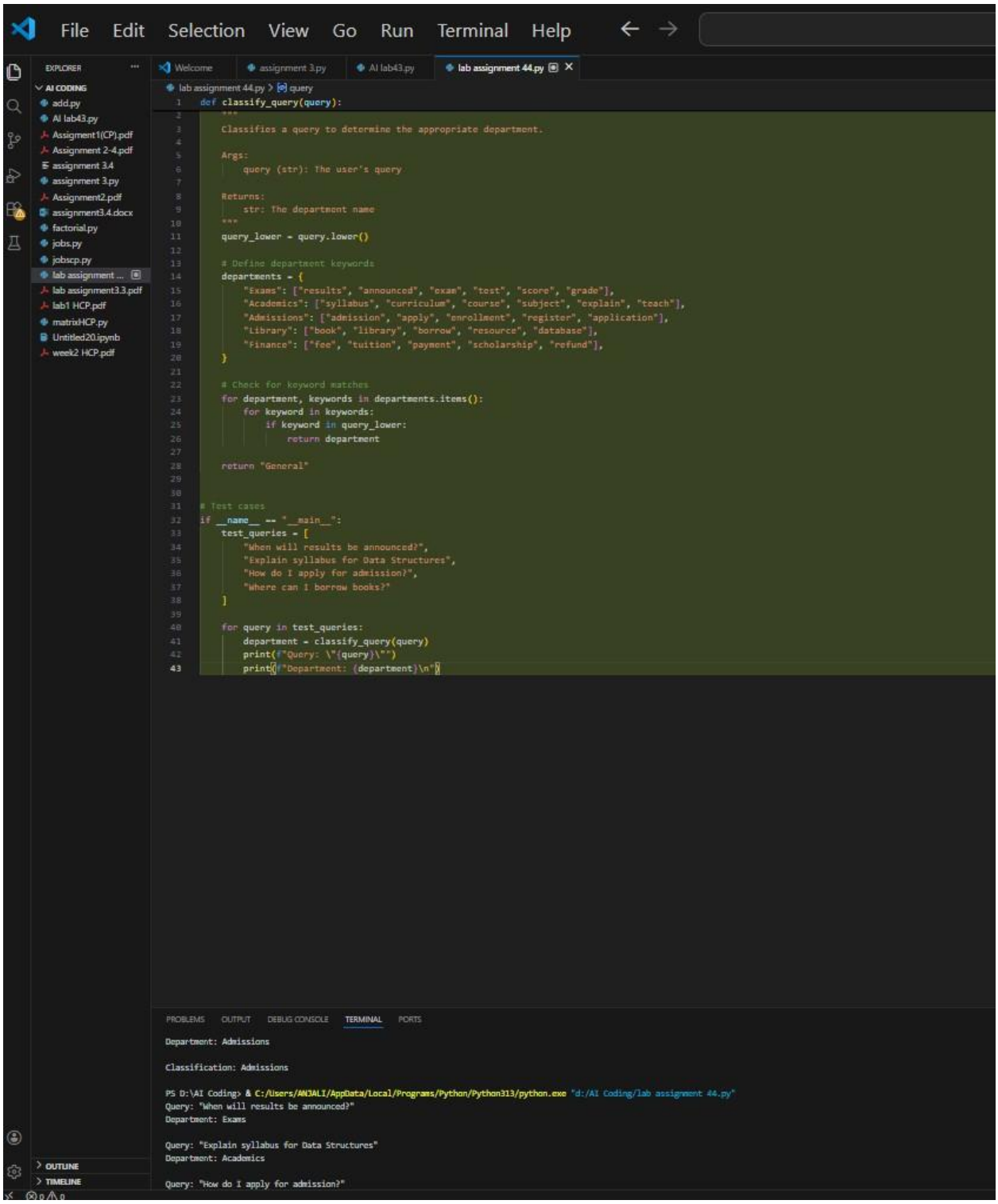
3a) . Create 6 sample student queries mapped to departments.



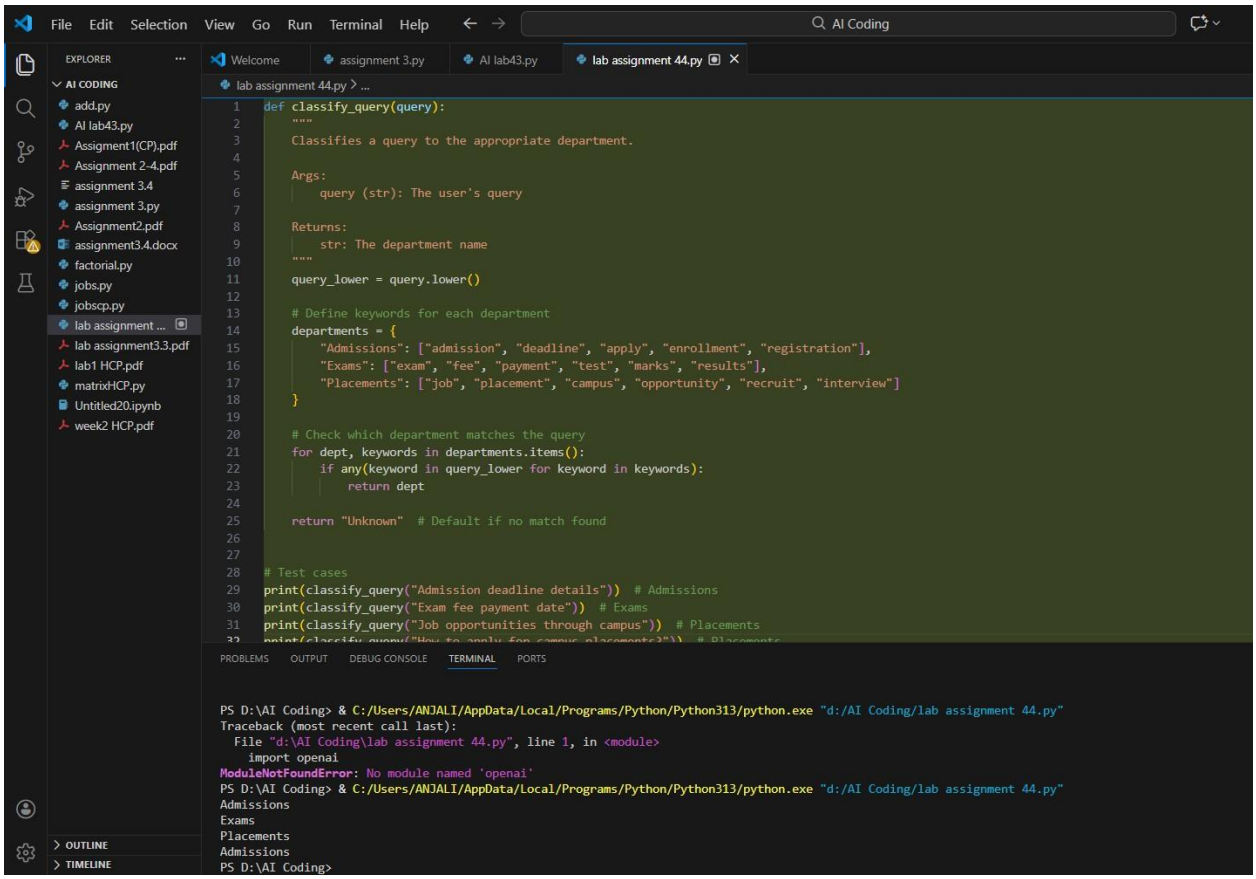
3b) Implement Zero-shot intent classification using an LLM.



3c) mprove results using One-shot prompting.



3d) Further refine results using Few-shot prompting.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assignment 3.4
assignment 3.py
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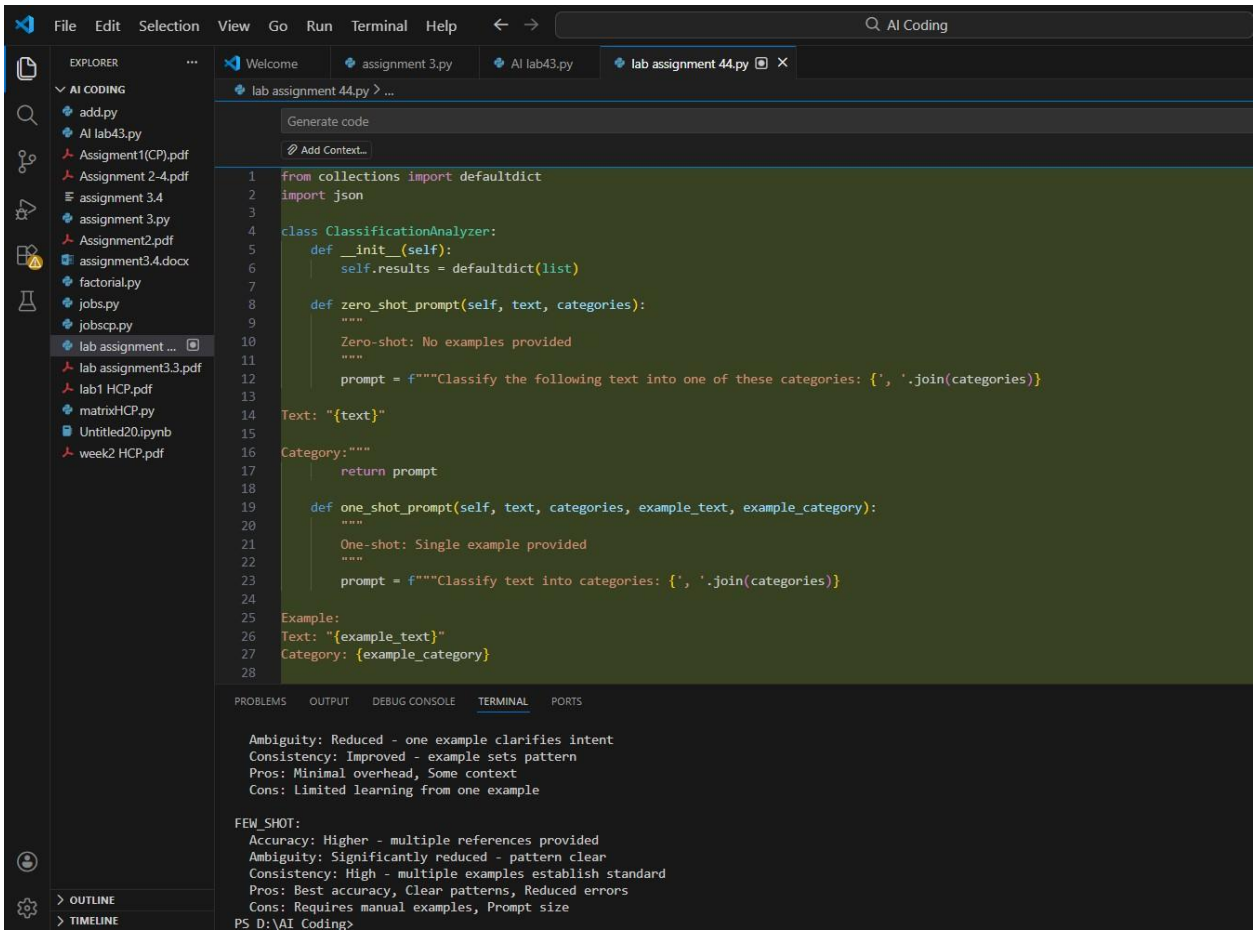
assignment3.4.docx
factorial.py
jobs.py
jobscp.py
lab assignment ...
lab assignment3.3.pdf
lab1 HCP.pdf
matrixHCP.py
Untitled20.ipynb
week2 HCP.pdf
OUTLINE
TIMELINE
Welcome
assignment 3.py
AI lab43.py
lab assignment 44.py
lab assignment 44.py > ...
def classify_query(query):
"""
Classifies a query to the appropriate department.
Args:
query (str): The user's query
Returns:
str: The department name
"""
query_lower = query.lower()
# Define keywords for each department
departments = {
"Admissions": ["admission", "deadline", "apply", "enrollment", "registration"],
"Exams": ["exam", "fee", "payment", "test", "marks", "results"],
"Placements": ["job", "placement", "campus", "opportunity", "recruit", "interview"]
}
# Check which department matches the query
for dept, keywords in departments.items():
if any(keyword in query_lower for keyword in keywords):
return dept
return "Unknown" # Default if no match found
Test cases
print(classify_query("Admission deadline details")) # Admissions
print(classify_query("Exam fee payment date")) # Exams
print(classify_query("Job opportunities through campus")) # Placements
PROBLEMS OUTPUT DEBUG CONSOLE TERMINAL PORTS
PS D:\AI Coding> & C:/Users/ANJALI/AppData/Local/Programs/Python/Python313/python.exe "d:/AI Coding/lab assignment 44.py"
Traceback (most recent call last):
File "d:\AI Coding\lab assignment 44.py", line 1, in <module>
import openai
ModuleNotFoundError: No module named 'openai'
PS D:\AI Coding> & C:/Users/ANJALI/AppData/Local/Programs/Python/Python313/python.exe "d:/AI Coding/lab assignment 44.py"
Admissions
Exams
Placements
Admissions
PS D:\AI Coding>

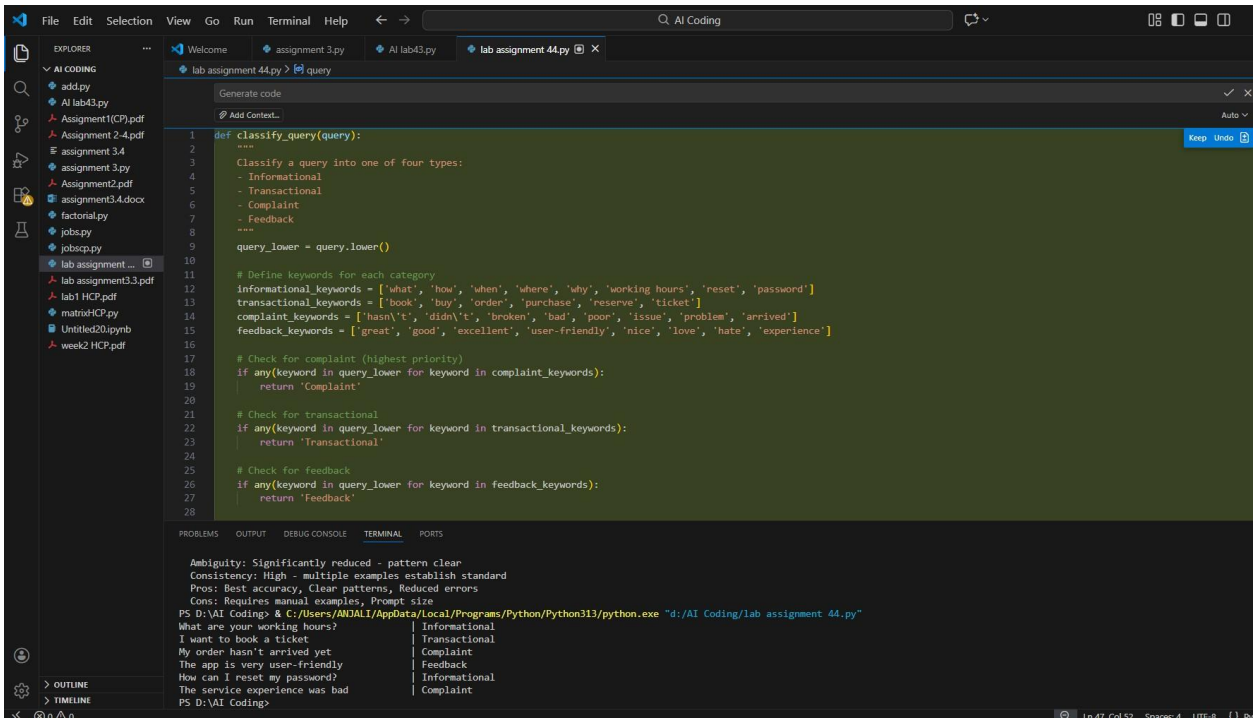
3e) Analyze how contextual examples affect classification accuracy.



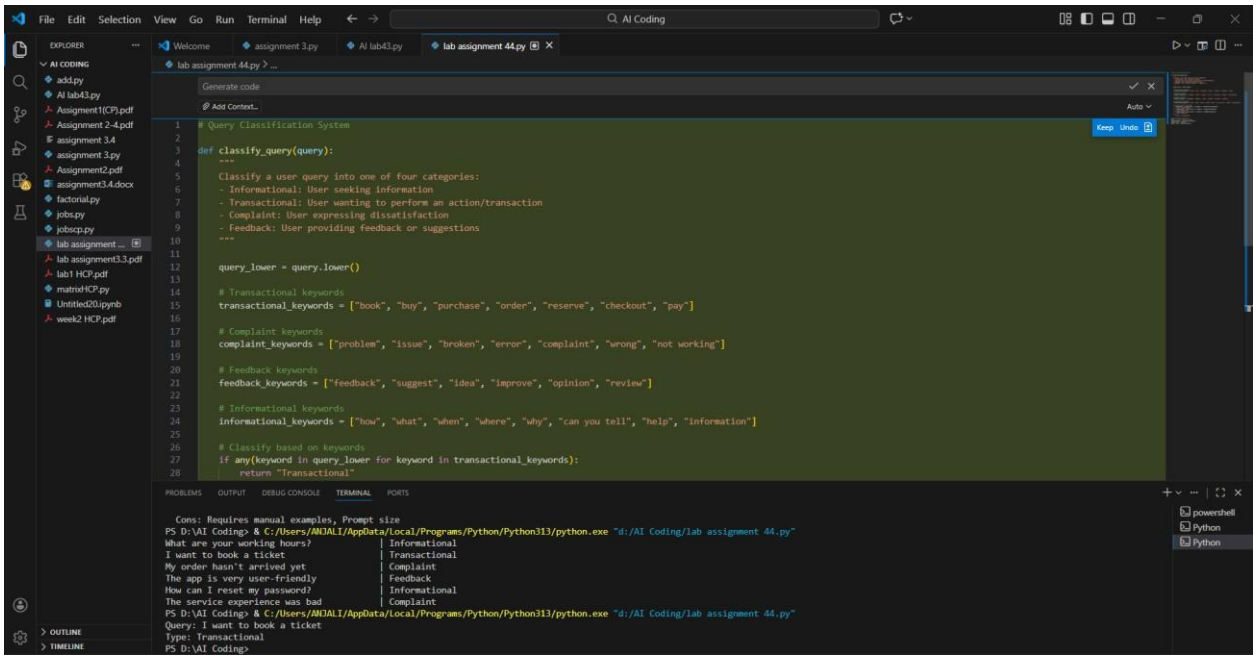
4)Chatbot Question Type Detection Scenario:

A chatbot must identify whether a user query is Informational, Transactional, Complaint, or Feedback.

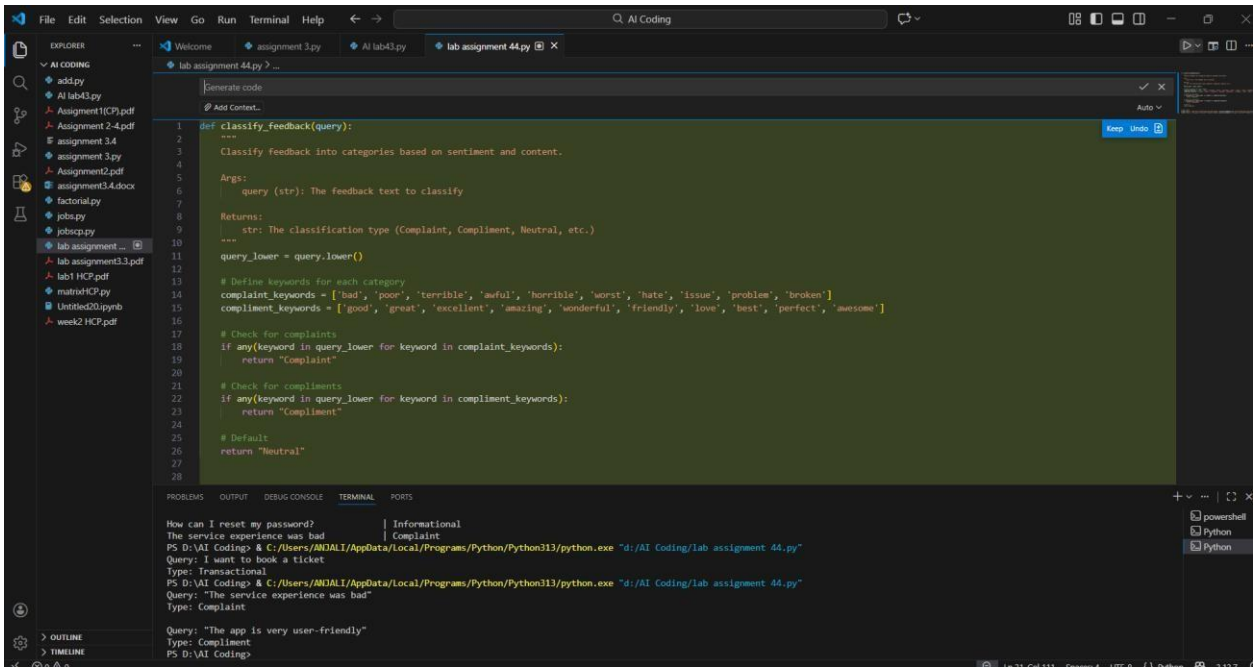
4a) Prepare 6 chatbot queries mapped to question types.



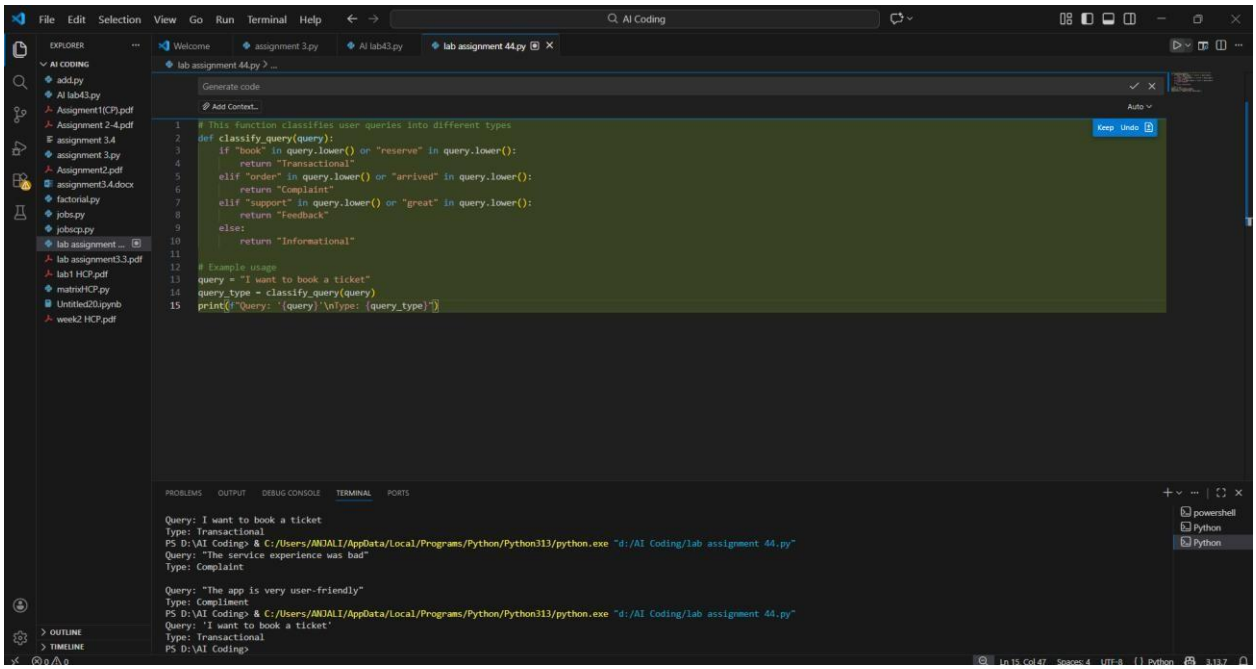
4b) Design prompts for Zero-shot, One-shot, and Few-shot learning.



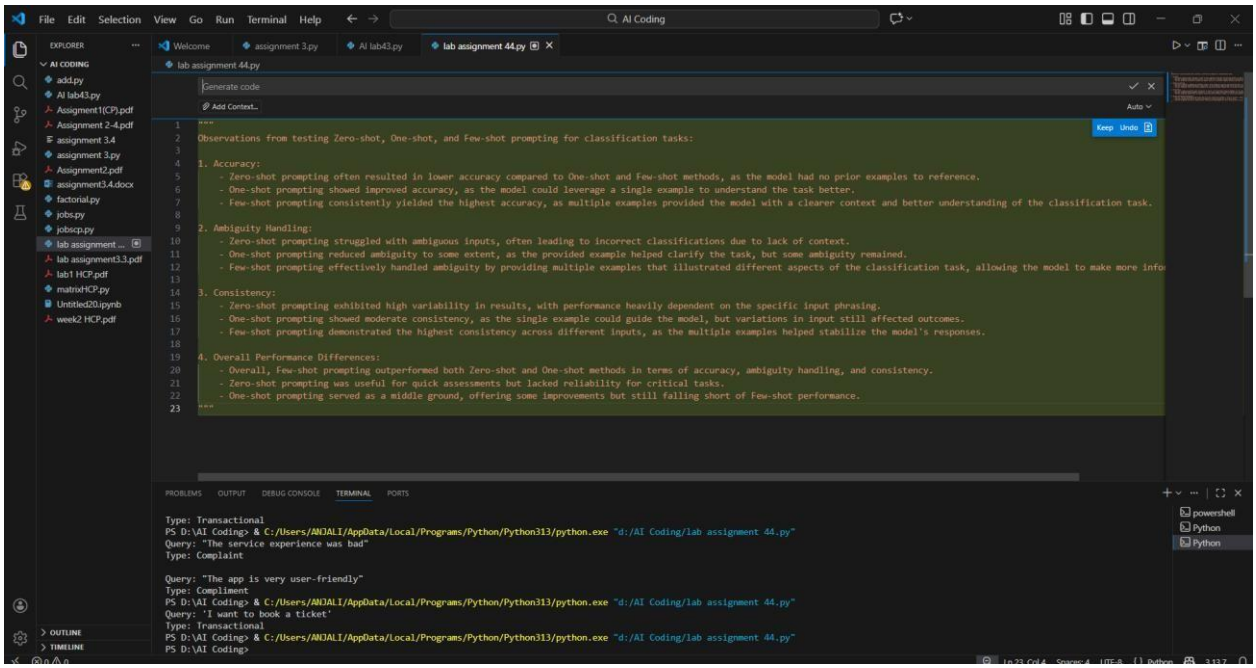
4c) Test all prompts on the same unseen queries.



4d) Compare response correctness and ambiguity handling.



4e) Document observations.

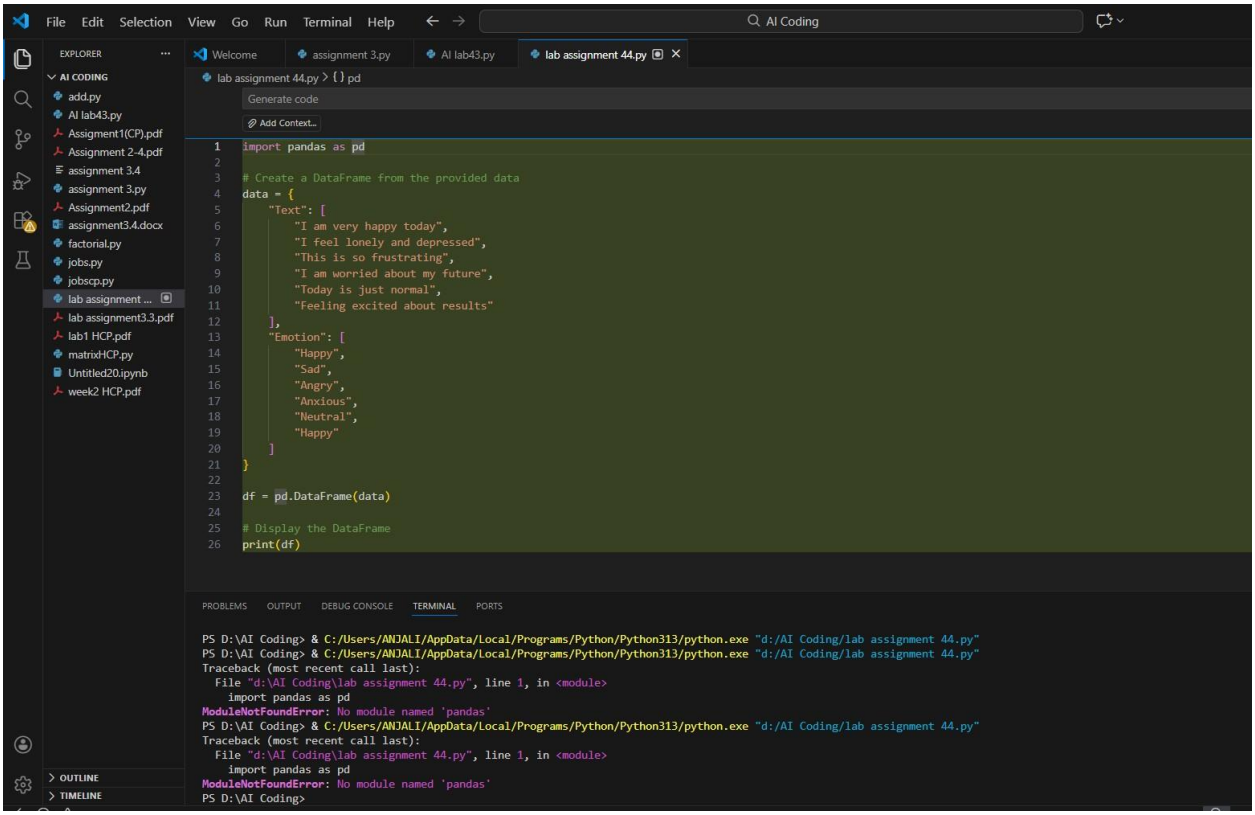


5)Emotion Detection in Text

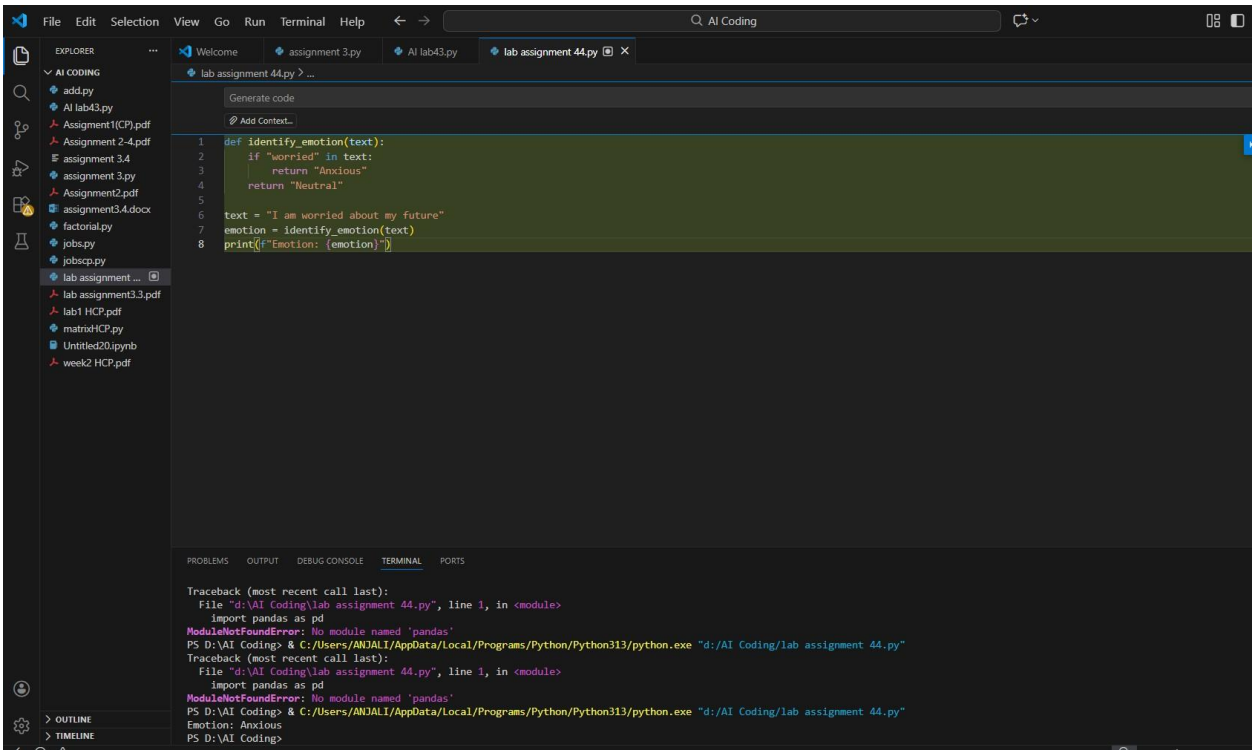
Scenario:

A mental-health chatbot needs to detect emotions: Happy, Sad, Angry, Anxious, Neutral.

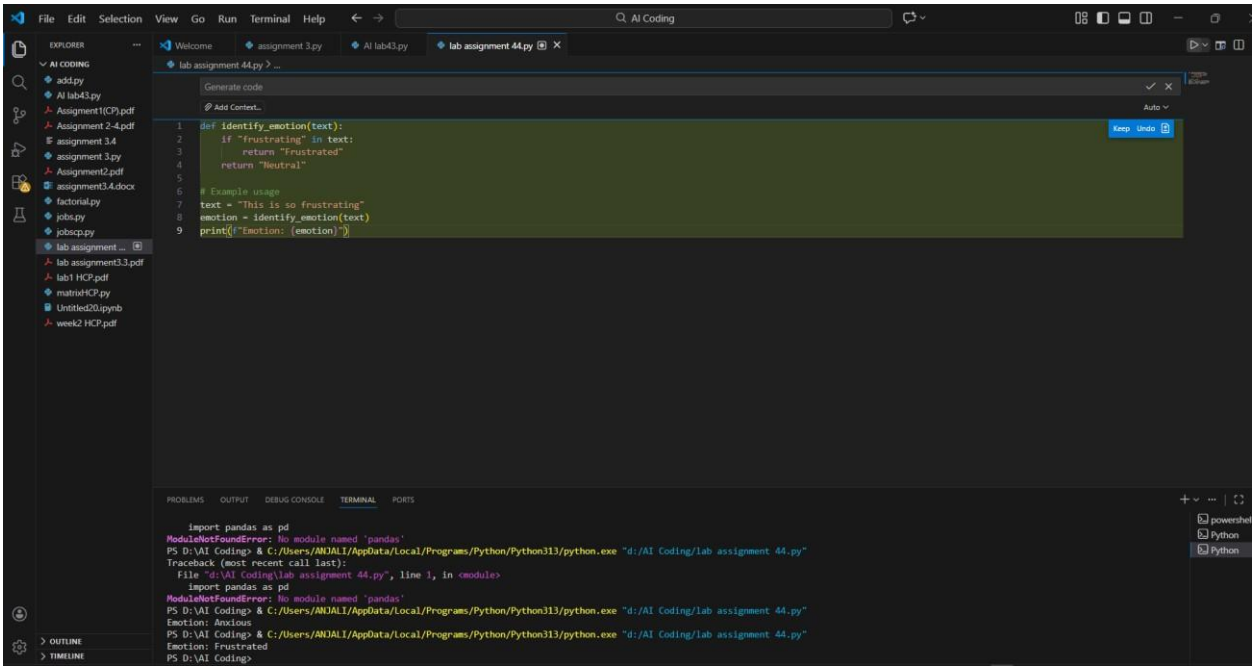
5a)Create labeled emotion samples.



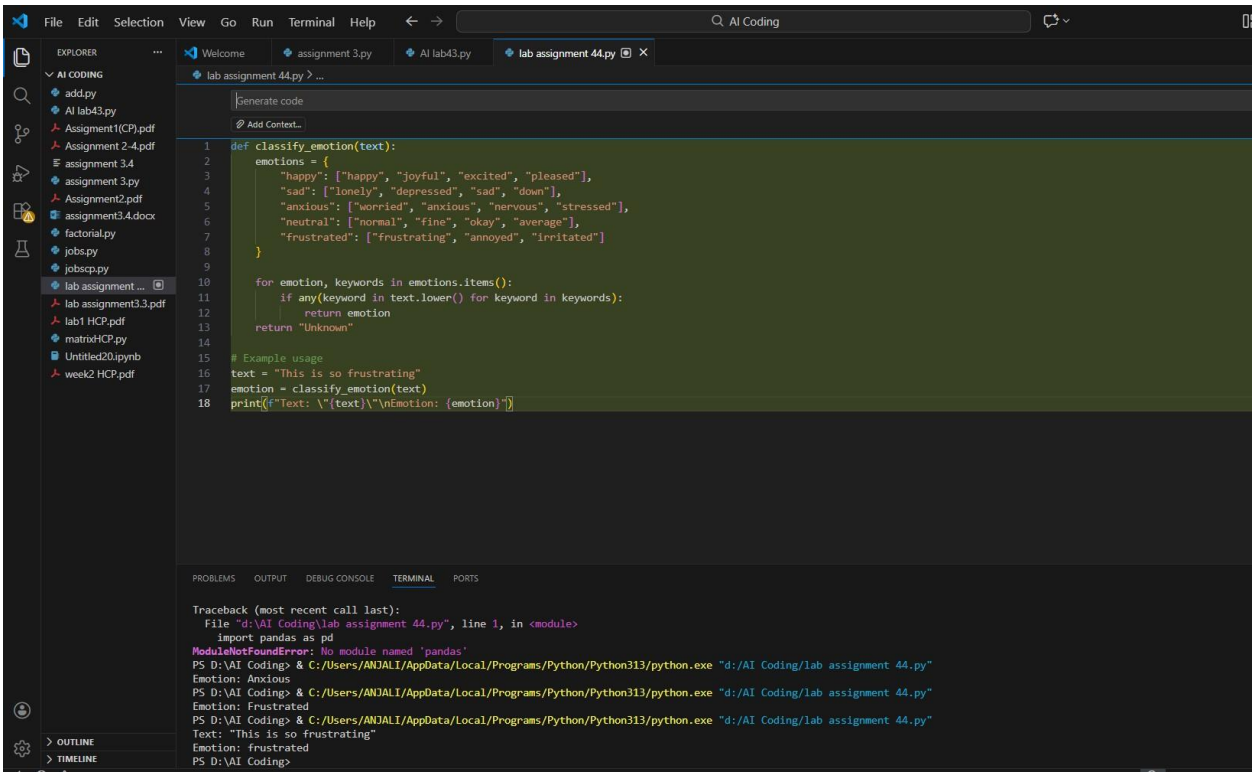
5b) Use Zero-shot prompting to identify emotions.



5c) Use One-shot prompting with an example.



5d) Use Few-shot prompting with multiple emotions.



5e) Discuss ambiguity handling across techniques.