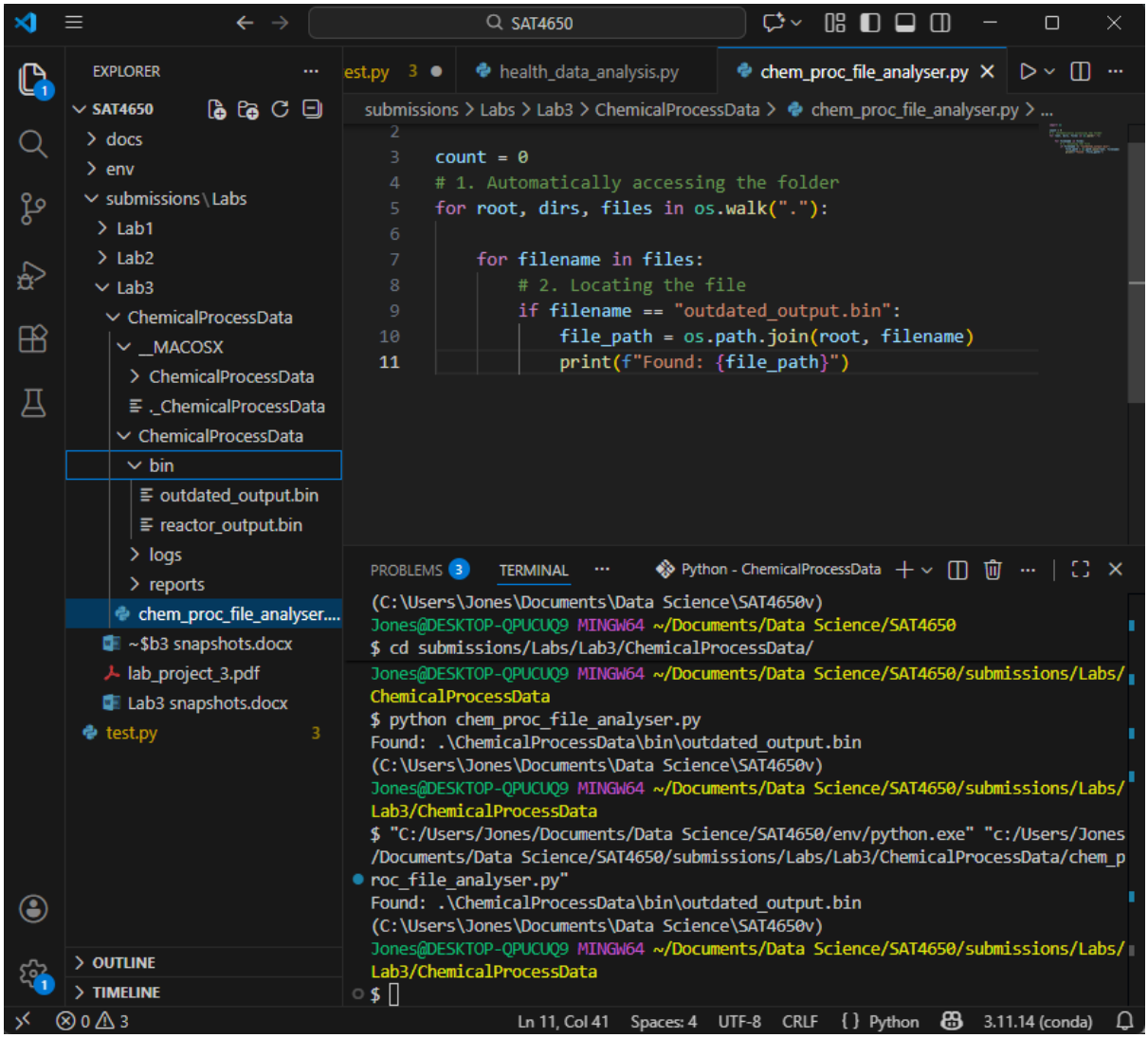
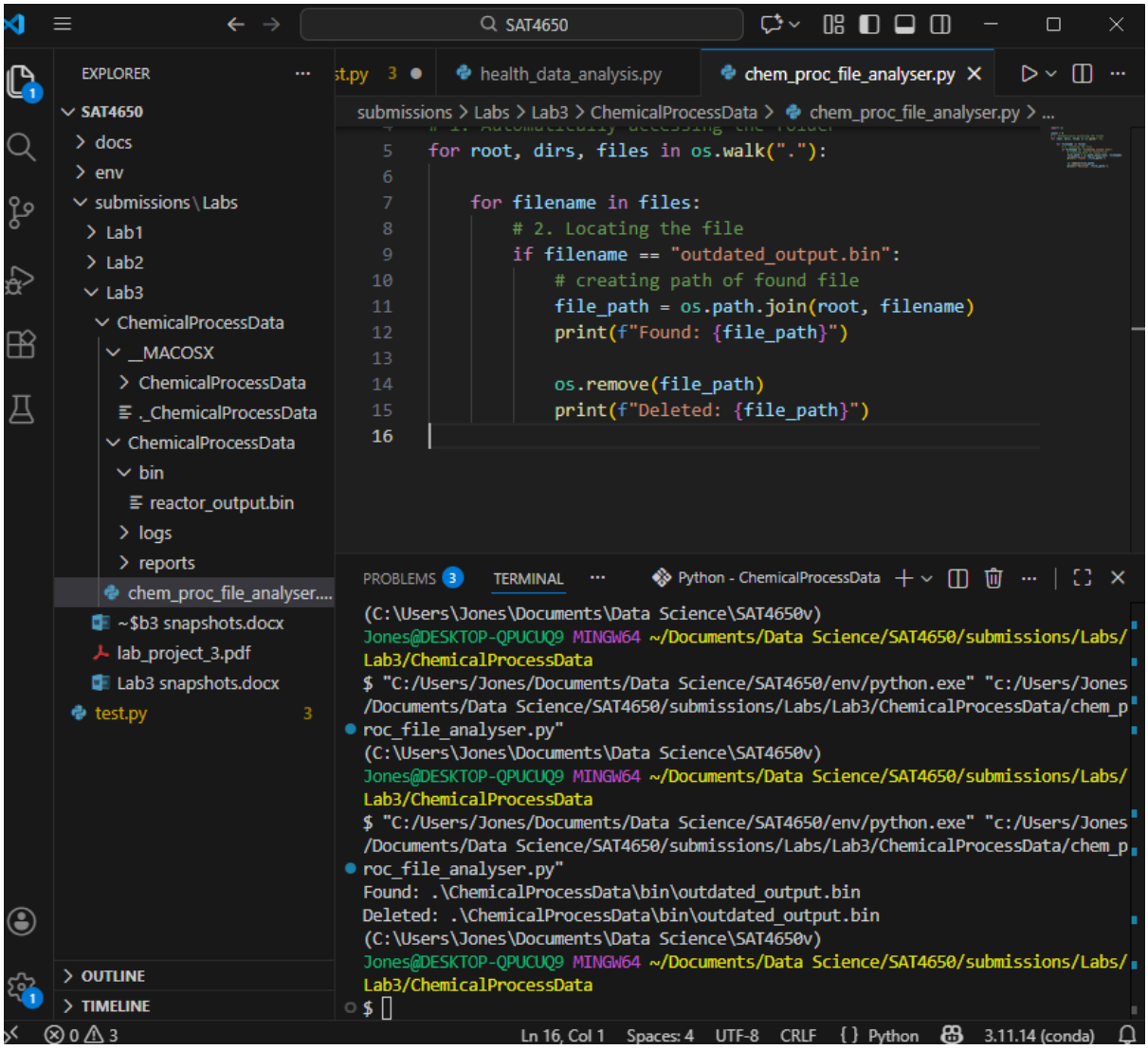
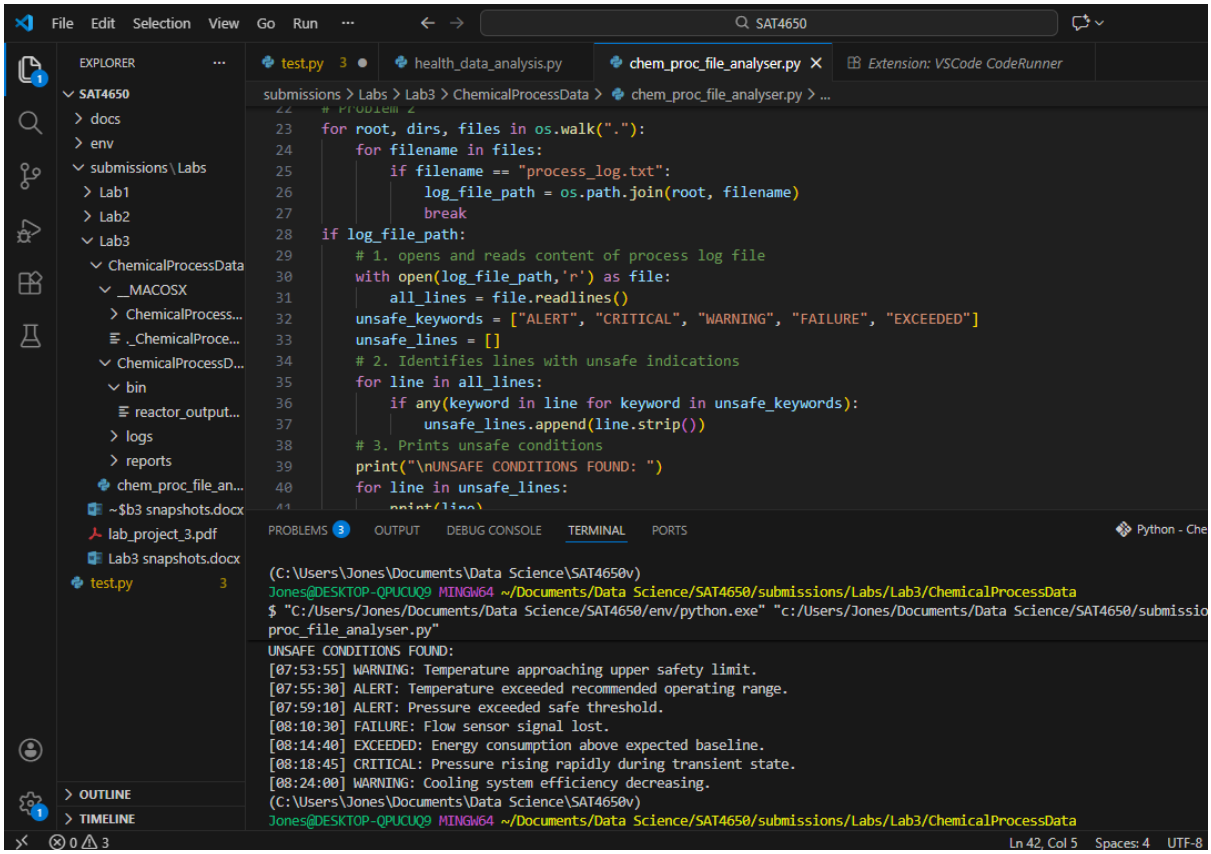

SAT4650
EXPLORER
SAT4650
docs
env
submissions\Labs
Lab1
Lab2
Lab3
ChemicalProcessData
__MACOSX
ChemicalProcessData
._ChemicalProcessData
ChemicalProcessData
bin
outdated_output.bin
reactor_output.bin
logs
reports
chem_proc_file_analyser....
~$b3 snapshots.docx
lab_project_3.pdf
Lab3 snapshots.docx
test.py 3
OUTLINE
TIMELINE
est.py 3
health_data_analysis.py
chem_proc_file_analyser.py
submissions > Labs > Lab3 > ChemicalProcessData > chem_proc_file_analyser.py > ...
count = 0
# 1. Automatically accessing the folder
for root, dirs, files in os.walk(".":
for filename in files:
# 2. Locating the file
if filename == "outdated_output.bin":
file_path = os.path.join(root, filename)
print(f"Found: {file_path}")
PROBLEMS 3
TERMINAL
Python - ChemicalProcessData
(C:\Users\Jones\Documents\Data Science\SAT4650v)
Jones@DESKTOP-QPUCUQ9 MINGW64 ~/Documents/Data Science/SAT4650
$ cd submissions/Labs/Lab3/ChemicalProcessData/
Jones@DESKTOP-QPUCUQ9 MINGW64 ~/Documents/Data Science/SAT4650/submissions/Labs/ChemicalProcessData
$ python chem_proc_file_analyser.py
Found: .\ChemicalProcessData\bin\outdated_output.bin
(C:\Users\Jones\Documents\Data Science\SAT4650v)
Jones@DESKTOP-QPUCUQ9 MINGW64 ~/Documents/Data Science/SAT4650/submissions/Labs/Lab3/ChemicalProcessData
$ "C:/Users/Jones/Documents/Data Science/SAT4650/env/python.exe" "c:/Users/Jones/Documents/Data Science/SAT4650/submissions/Labs/Lab3/ChemicalProcessData/chem_proc_file_analyser.py"
Found: .\ChemicalProcessData\bin\outdated_output.bin
(C:\Users\Jones\Documents\Data Science\SAT4650v)
Jones@DESKTOP-QPUCUQ9 MINGW64 ~/Documents/Data Science/SAT4650/submissions/Labs/Lab3/ChemicalProcessData
$
0 3
Ln 11, Col 41
Spaces: 4
UTF-8
CRLF
Python
3.11.14 (conda)

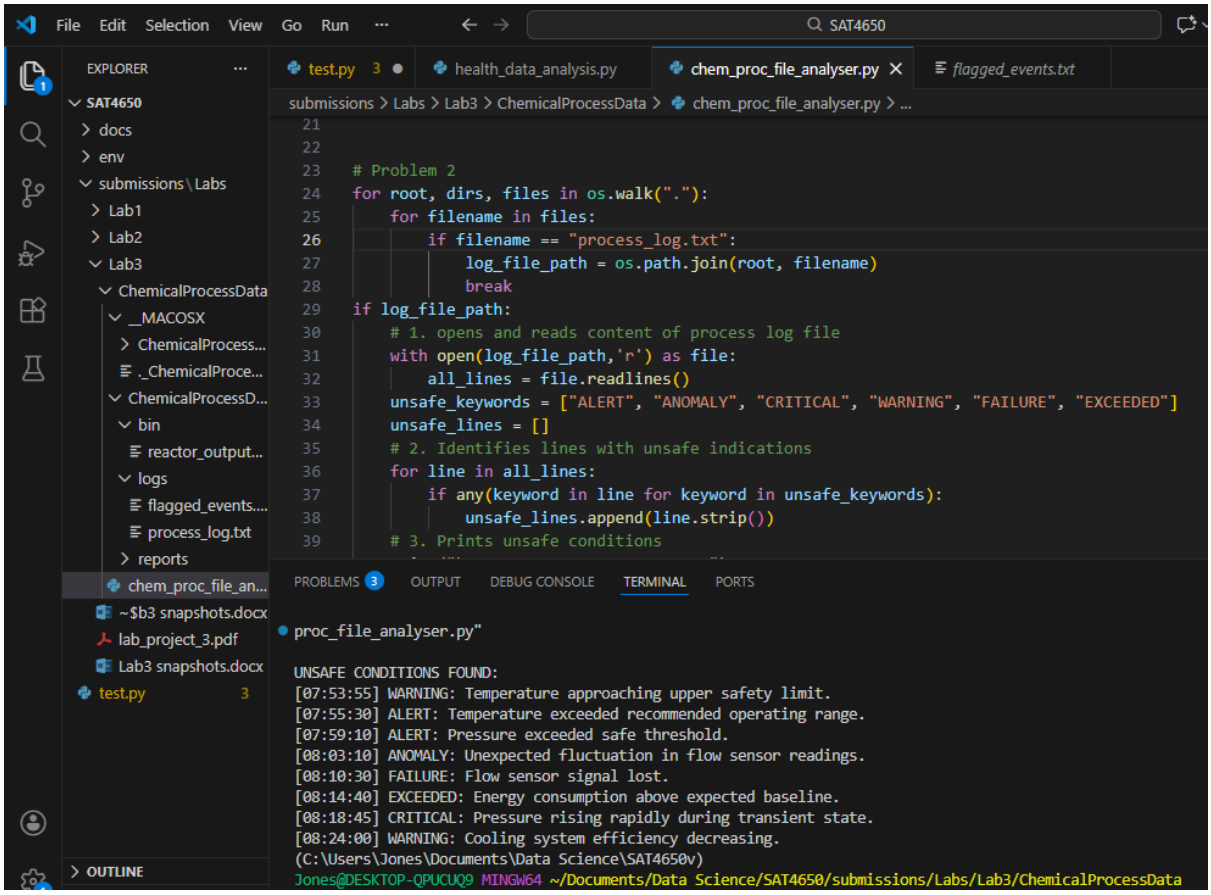
File deleted:



Printed unsafe conditions:



After adding the word ‘ANOMALY’ to flagged unsafe events:


File Edit Selection View Go Run ···
SAT4650
EXPLORER
SAT4650
docs
env
submissions \ Labs
Lab1
Lab2
Lab3
ChemicalProcessData
__MACOSX
ChemicalProcess...
._ChemicalProce...
ChemicalProcessD...
bin
reactor_output...
logs
flagged_events....
process_log.txt
reports
chem_proc_file_an...
~$b3 snapshots.docx
lab_project_3.pdf
Lab3 snapshots.docx
test.py 3
OUTLINE
test.py 3
health_data_analysis.py
chem_proc_file_analyser.py
flagged_events.txt
submissions > Labs > Lab3 > ChemicalProcessData > chem_proc_file_analyser.py > ...
21
22
23 # Problem 2
24 for root, dirs, files in os.walk("."):
25 for filename in files:
26 if filename == "process_log.txt":
27 log_file_path = os.path.join(root, filename)
28 break
29 if log_file_path:
30 # 1. opens and reads content of process log file
31 with open(log_file_path,'r') as file:
32 all_lines = file.readlines()
33 unsafe_keywords = ["ALERT", "ANOMALY", "CRITICAL", "WARNING", "FAILURE", "EXCEEDED"]
34 unsafe_lines = []
35 # 2. Identifies lines with unsafe indications
36 for line in all_lines:
37 if any(keyword in line for keyword in unsafe_keywords):
38 unsafe_lines.append(line.strip())
39 # 3. Prints unsafe conditions
PROBLEMS 3
OUTPUT
DEBUG CONSOLE
TERMINAL
PORTS
proc_file_analyser.py"
UNSAFE CONDITIONS FOUND:
[07:53:55] WARNING: Temperature approaching upper safety limit.
[07:55:30] ALERT: Temperature exceeded recommended operating range.
[07:59:10] ALERT: Pressure exceeded safe threshold.
[08:03:10] ANOMALY: Unexpected fluctuation in flow sensor readings.
[08:10:30] FAILURE: Flow sensor signal lost.
[08:14:40] EXCEEDED: Energy consumption above expected baseline.
[08:18:45] CRITICAL: Pressure rising rapidly during transient state.
[08:24:00] WARNING: Cooling system efficiency decreasing.
(C:\Users\Jones\Documents\Data Science\SAT4650v)
Jones@DESKTOP-QPUCUQ9 MINGW64 ~/Documents/Data Science/SAT4650/submissions/Labs/Lab3/ChemicalProcessData