LAB ASSIGNMENT 5.4

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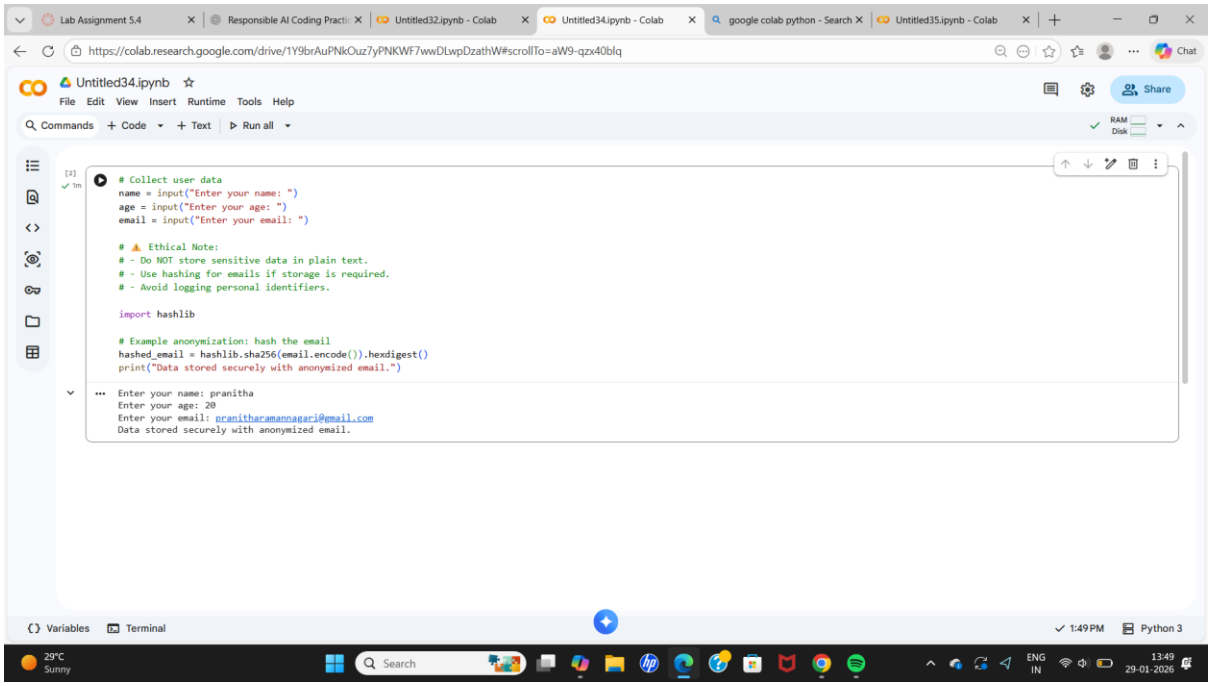
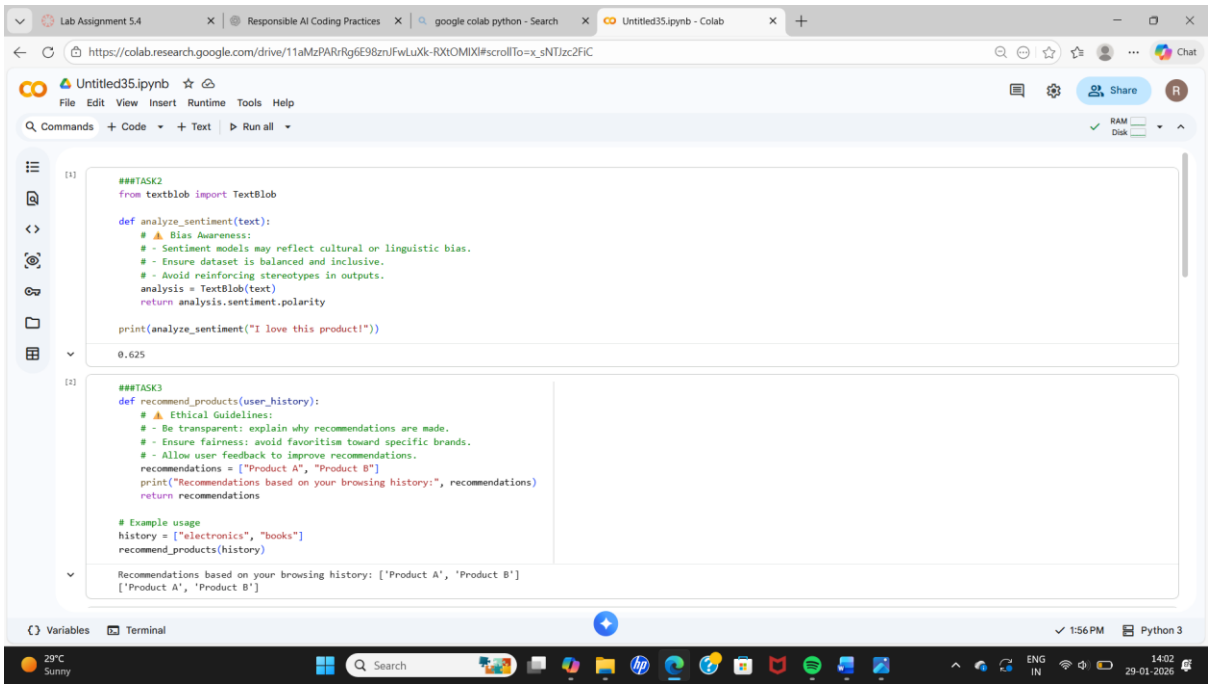
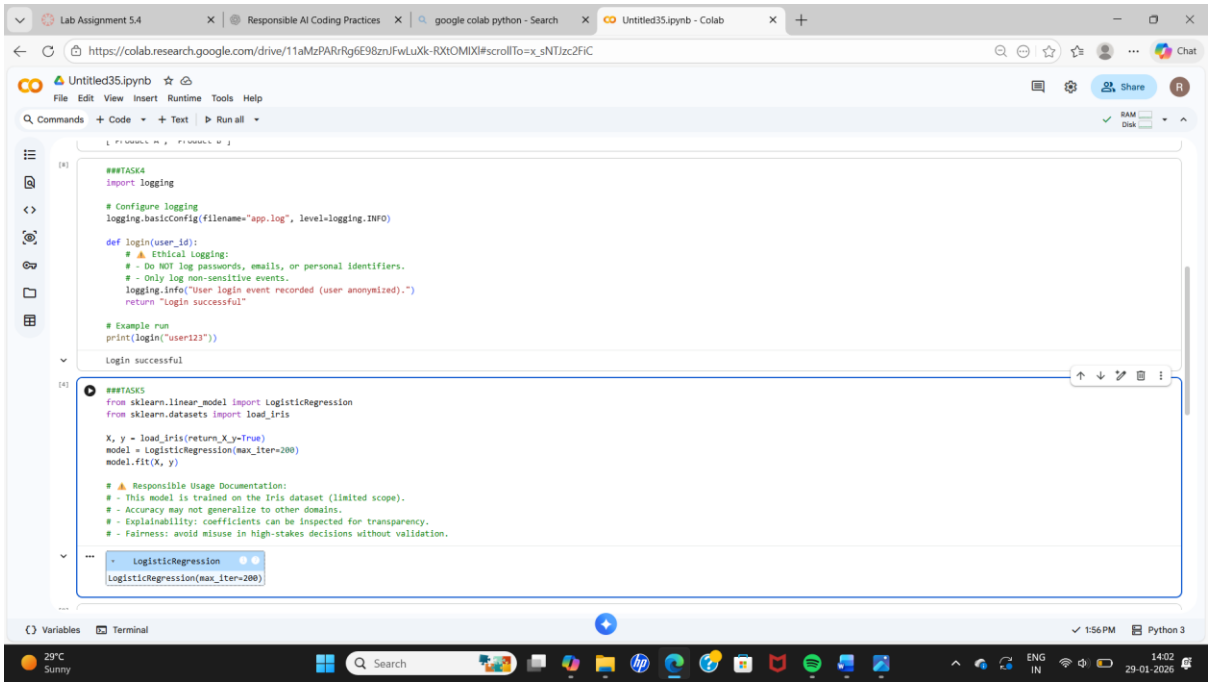
SUBJECT: AI ASST CODING





If the output if more or equal to 0.5 it is positive statement.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###TASK4
import logging
# Configure logging
logging.basicConfig(filename="app.log", level=logging.INFO)
def login(user_id):
# ⚠ Ethical Logging:
# - Do NOT log passwords, emails, or personal identifiers.
# - Only log non-sensitive events.
logging.info("User login event recorded (user anonymized).")
return "Login successful"
# Example run
print(login("user123"))
Login successful
###TASK5
from sklearn.linear_model import LogisticRegression
from sklearn.datasets import load_iris
X, y = load_iris(return_X_y=True)
model = LogisticRegression(max_iter=200)
model.fit(X, y)
# ⚠ Responsible Usage Documentation:
# - This model is trained on the Iris dataset (limited scope).
# - Accuracy may not generalize to other domains.
# - Explainability: coefficients can be inspected for transparency.
# - Fairness: avoid misuse in high-stakes decisions without validation.
LogisticRegression
LogisticRegression(max_iter=200)
Variables Terminal
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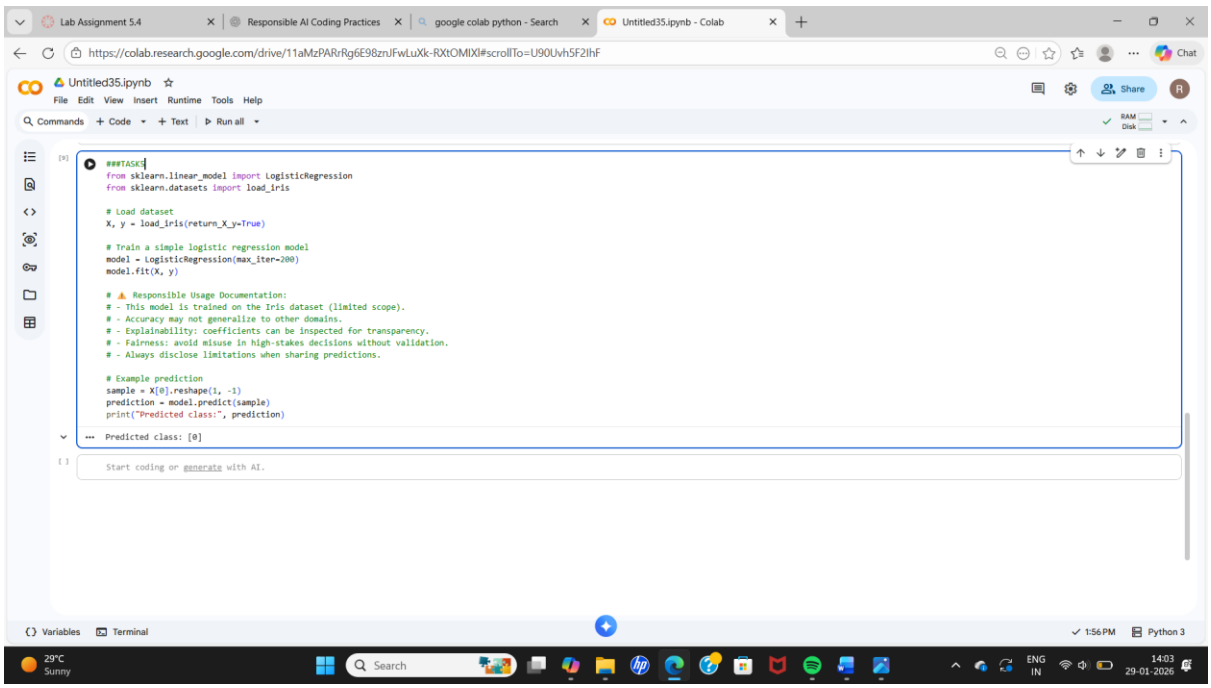
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###TASK5
from sklearn.linear_model import LogisticRegression
from sklearn.datasets import load_iris
# Load dataset
X, y = load_iris(return_X_y=True)
# Train a simple logistic regression model
model = LogisticRegression(max_iter=200)
model.fit(X, y)
# ⚠ Responsible Usage Documentation:
# - This model is trained on the Iris dataset (limited scope).
# - Accuracy may not generalize to other domains.
# - Explainability: coefficients can be inspected for transparency.
# - Fairness: avoid misuse in high-stakes decisions without validation.
# - Always disclose limitations when sharing predictions.
# Example prediction
sample = X[0].reshape(1, -1)
prediction = model.predict(sample)
print("Predicted class:", prediction)
Predicted class: [0]
Start coding or generate with AI.
Variables Terminal
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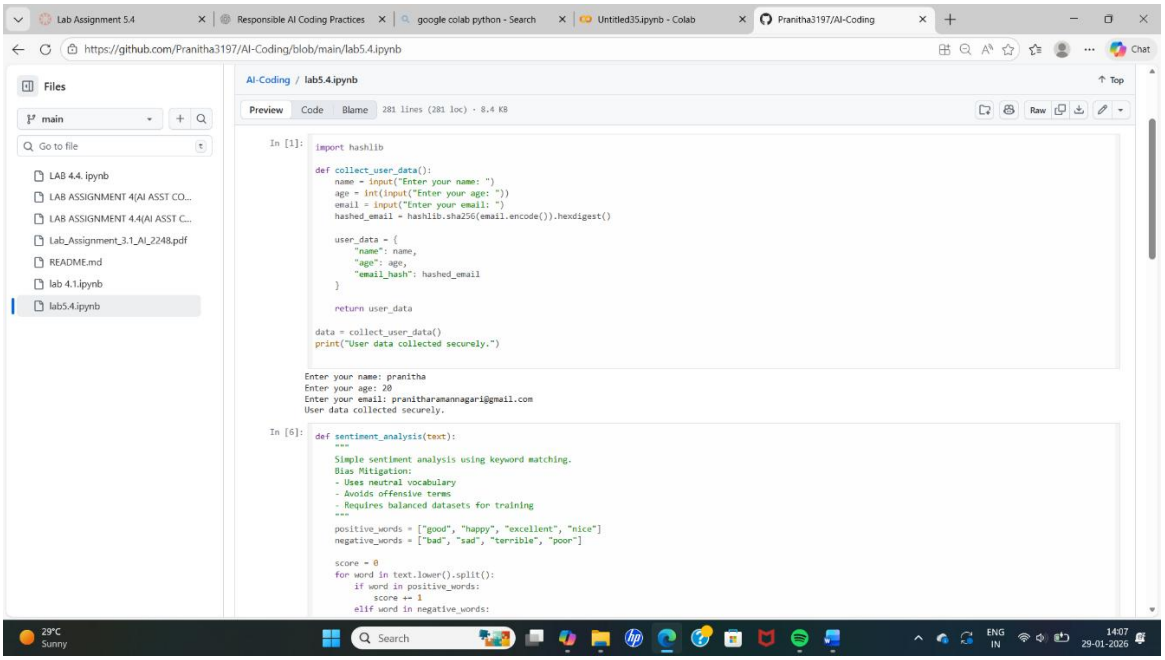
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Files
main
Go to file
LAB 4.4. ipynb
LAB ASSIGNMENT 4(AI ASST CO...
LAB ASSIGNMENT 4.4(AI ASST C...
Lab_Assignment_3.1_AI_2248.pdf
README.md
lab 4.1.ipynb
lab5.4.ipynb
AI-Coding / lab5.4.ipynb
Top
Preview
Code
Blame
281 lines (281 loc) · 8.4 KB
Raw
In [1]:
import hashlib
def collect_user_data():
name = input("Enter your name: ")
age = int(input("Enter your age: "))
email = input("Enter your email: ")
hashed_email = hashlib.sha256(email.encode()).hexdigest()
user_data = {
"name": name,
"age": age,
"email_hash": hashed_email
}
return user_data
data = collect_user_data()
print("User data collected securely.")
Enter your name: pranitha
Enter your age: 20
Enter your email: pranitharamannagari@gmail.com
User data collected securely.
In [6]:
def sentiment_analysis(text):
"""
Simple sentiment analysis using keyword matching.
Bias Mitigation:
- Uses neutral vocabulary
- Avoids offensive terms
- Requires balanced datasets for training
"""
positive_words = ["good", "happy", "excellent", "nice"]
negative_words = ["bad", "sad", "terrible", "poor"]
score = 0
for word in text.lower().split():
if word in positive_words:
score += 1
elif word in negative_words:
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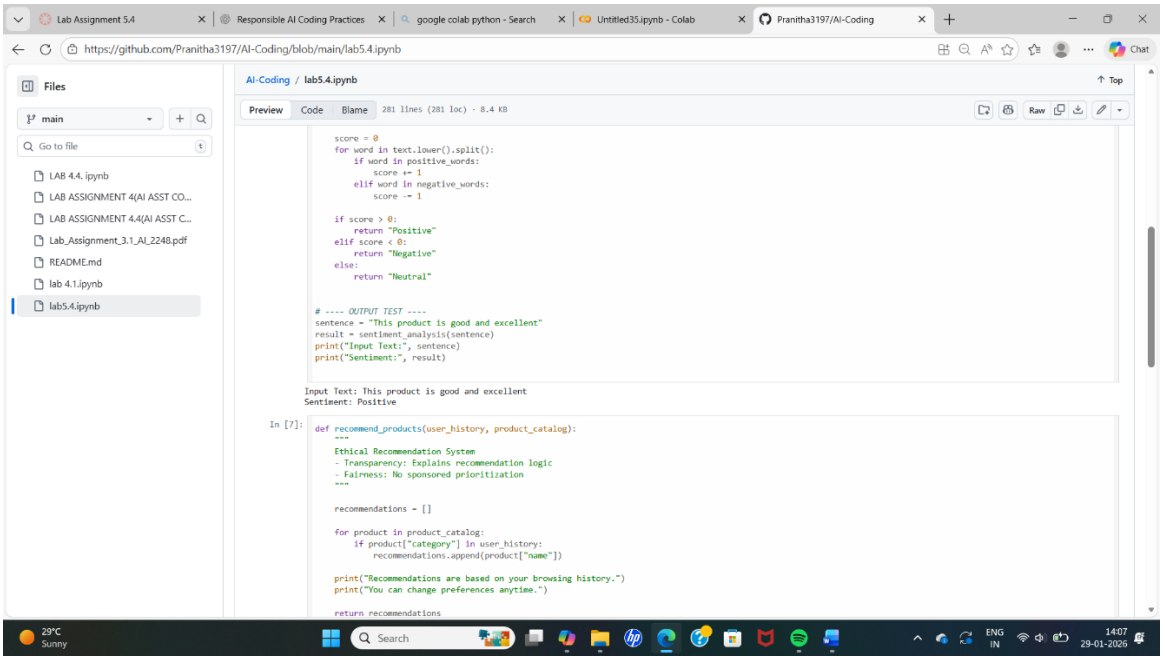
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README.md
lab 4.1.ipynb
lab5.4.ipynb
AI-Coding / lab5.4.ipynb
Top
Preview
Code
Blame
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Raw
score = 0
for word in text.lower().split():
if word in positive_words:
score += 1
elif word in negative_words:
score -= 1
if score > 0:
return "Positive"
elif score < 0:
return "Negative"
else:
return "Neutral"
# ---- OUTPUT TEST ----
sentence = "This product is good and excellent"
result = sentiment_analysis(sentence)
print("Input Text:", sentence)
print("Sentiment:", result)
Input Text: This product is good and excellent
Sentiment: Positive
In [7]:
def recommend_products(user_history, product_catalog):
"""
Ethical Recommendation System
- Transparency: Explains recommendation logic
- Fairness: No sponsored prioritization
"""
recommendations = []
for product in product_catalog:
if product["category"] in user_history:
recommendations.append(product["name"])
print("Recommendations are based on your browsing history.")
print("You can change preferences anytime.")
return recommendations
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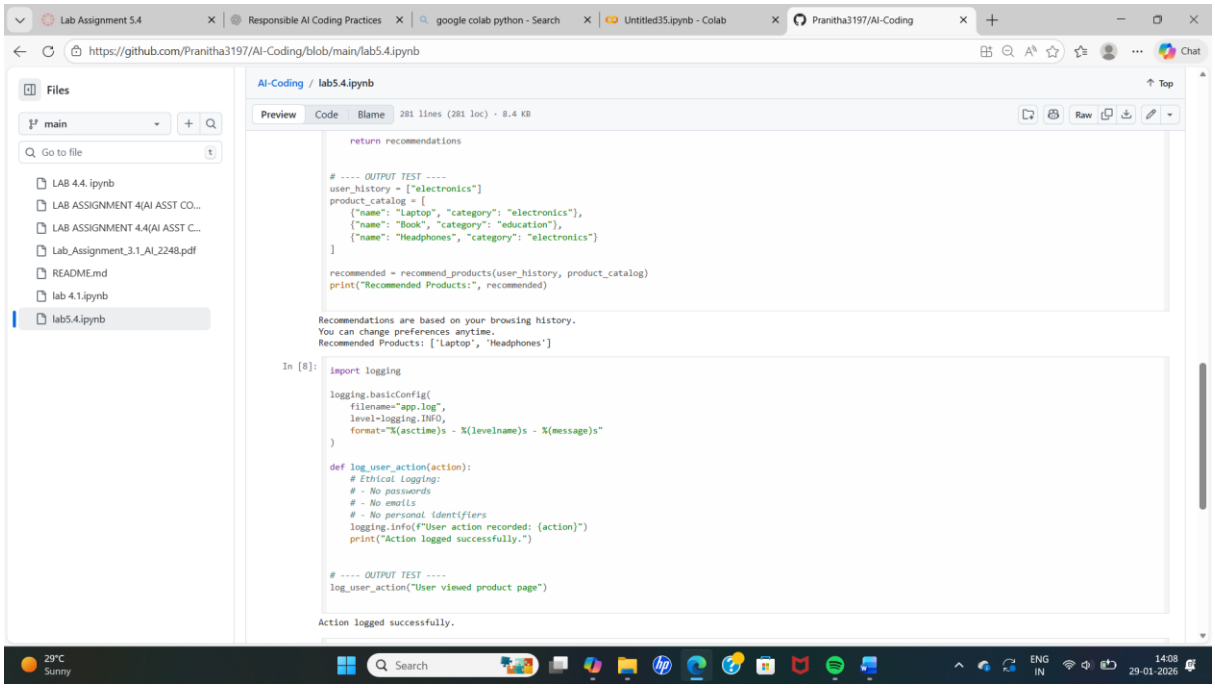
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Go to file
LAB 4.4. ipynb
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LAB ASSIGNMENT 4.4(AI ASST C...
Lab_Assignment_3.1_AI_2248.pdf
README.md
lab 4.1.ipynb
lab5.4.ipynb
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Preview
Code
Blame
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return recommendations
# ---- OUTPUT TEST ----
user_history = ["electronics"]
product_catalog = [
{"name": "Laptop", "category": "electronics"},
{"name": "Book", "category": "education"},
{"name": "Headphones", "category": "electronics"}
]
recommended = recommend_products(user_history, product_catalog)
print("Recommended Products:", recommended)
Recommendations are based on your browsing history.
You can change preferences anytime.
Recommended Products: ['Laptop', 'Headphones']
In [8]:
import logging
logging.basicConfig(
filename="app.log",
level=logging.INFO,
format="%(asctime)s - %(levelname)s - %(message)s"
)
def log_user_action(action):
# Ethical Logging:
# - No passwords
# - No emails
# - No personal identifiers
logging.info(f"User action recorded: {action}")
print("Action logged successfully.")
# ---- OUTPUT TEST ----
log_user_action("User viewed product page")
Action logged successfully.
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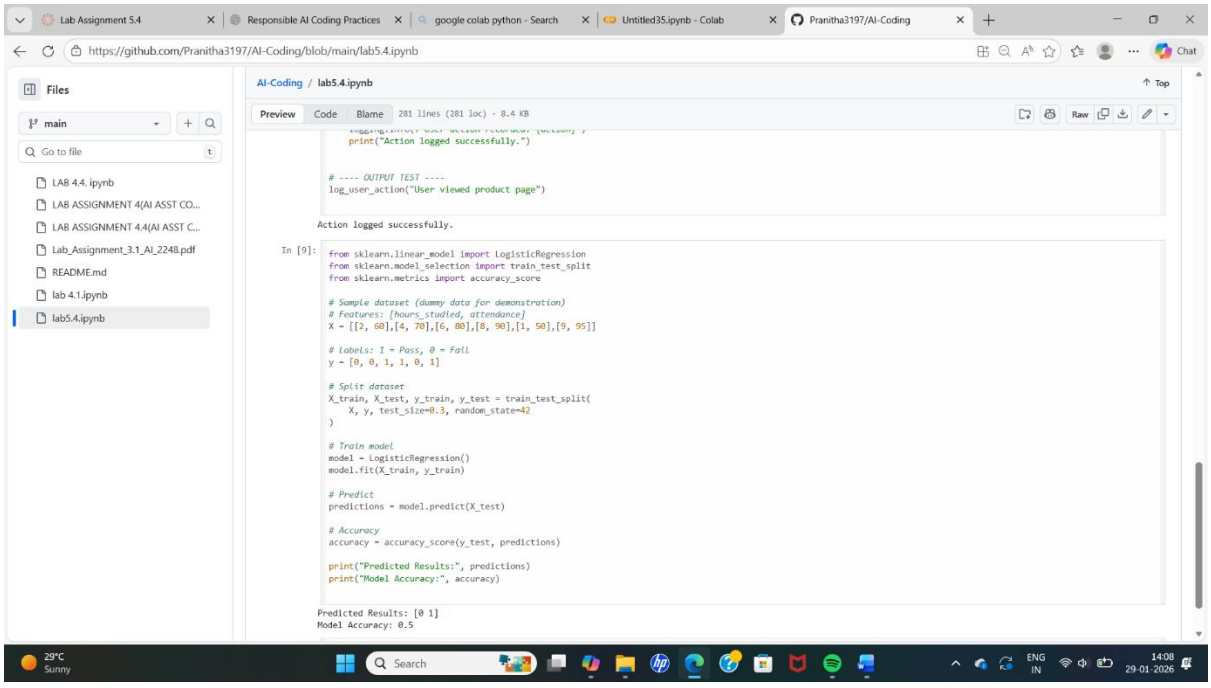
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LAB 4.4. ipynb
LAB ASSIGNMENT 4(AI ASST CO...
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Lab_Assignment_3.1_AI_2248.pdf
README.md
lab 4.1.ipynb
lab5.4.ipynb
AI-Coding / lab5.4.ipynb
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print("Action logged successfully.")
# ---- OUTPUT TEST ----
log_user_action("User viewed product page")
Action logged successfully.
In [9]:
from sklearn.linear_model import LogisticRegression
from sklearn.model_selection import train_test_split
from sklearn.metrics import accuracy_score
# Sample dataset (dummy data for demonstration)
# Features: [hours_studied, attendance]
X = [[2, 60],[4, 70],[6, 80],[8, 90],[1, 50],[9, 95]]
# Labels: 1 = Pass, 0 = Fail
y = [0, 0, 1, 1, 0, 1]
# Split dataset
X_train, X_test, y_train, y_test = train_test_split(
X, y, test_size=0.3, random_state=42
)
# Train model
model = LogisticRegression()
model.fit(X_train, y_train)
# Predict
predictions = model.predict(X_test)
# Accuracy
accuracy = accuracy_score(y_test, predictions)
print("Predicted Results:", predictions)
print("Model Accuracy:", accuracy)
Predicted Results: [0 1]
Model Accuracy: 0.5
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