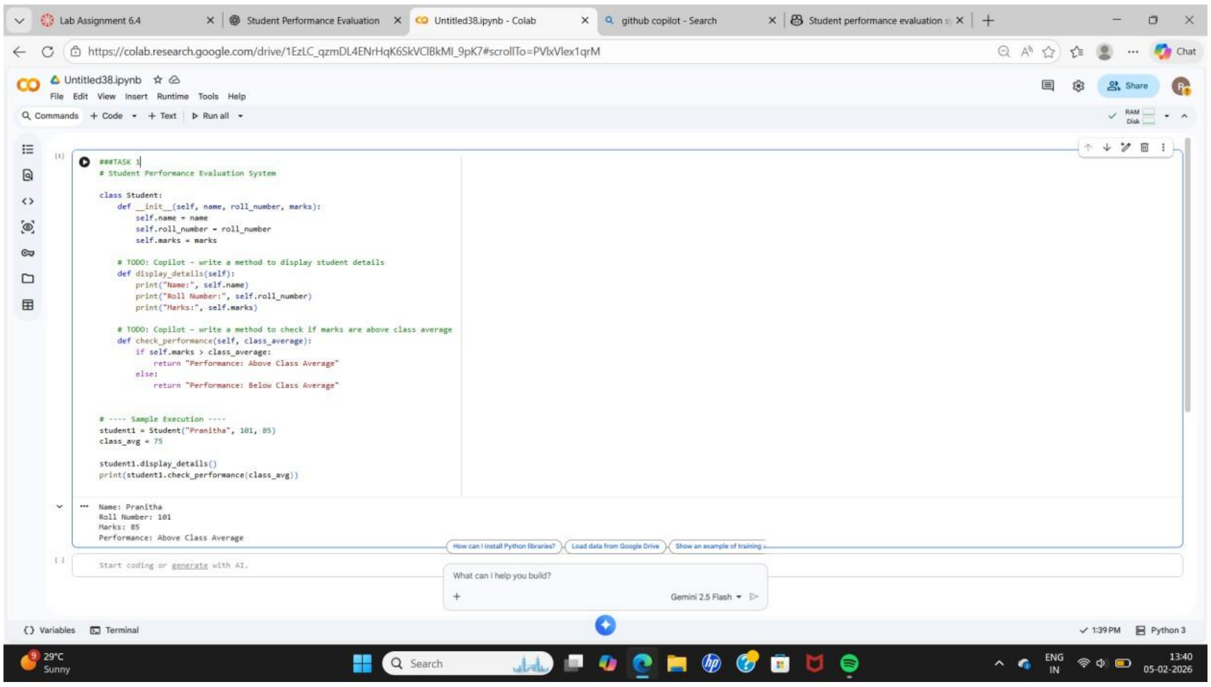
LAB ASSIGNMENT 6.4

NAME: A.Harshita

ID.NO:2303A52211

SUBJECT: AI ASST CODING

Task 1: Student Performance Evaluation System



```
###TASK 1
# Student Performance Evaluation System

class Student:
    def __init__(self, name, roll_number, marks):
        self.name = name
        self.roll_number = roll_number
        self.marks = marks

    # TODO: Copilot - write a method to display student details
    def display_details(self):
        print("Name:", self.name)
        print("Roll Number:", self.roll_number)
        print("Marks:", self.marks)

    # TODO: Copilot - write a method to check if marks are above class average
    def check_performance(self, class_average):
        if self.marks > class_average:
            return "Performance: Above Class Average"
        else:
            return "Performance: Below Class Average"


# ---- Sample Execution ----
student1 = Student("Pranitha", 101, 85)
class_avg = 75

student1.display_details()
print(student1.check_performance(class_avg))
```

```
Name: Pranitha
Roll Number: 101
Marks: 85
Performance: Above Class Average
```

Code Explanation:

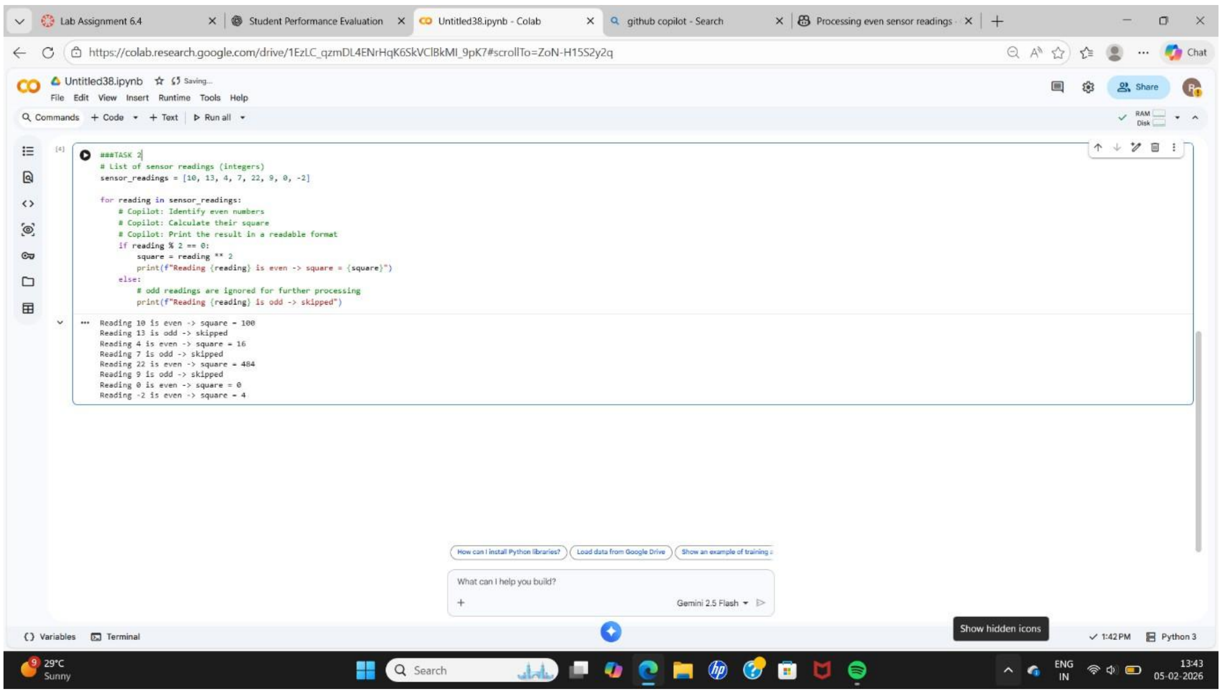
- A Student class is created with attributes name, roll_number, and marks.
- display_details() prints student information.
- check_performance() compares student marks with class average using if-else.
- If marks are greater than average, it returns **Above Class Average**, else **Below Class Average**.

PROMPT:

Create a method to display student details.

Create another method to check if student marks are above class average using if-else and return a message.

Task 2: Data Processing in a Monitoring System



```python
###TASK 2
# List of sensor readings (integers)
sensor_readings = [10, 13, 4, 7, 22, 9, 0, -2]

for reading in sensor_readings:
    # Copilot: Identify even numbers
    # Copilot: Calculate their square
    # Copilot: Print the result in a readable format
    if reading % 2 == 0:
        square = reading ** 2
        print(f"Reading {reading} is even -> square = {square}")
    else:
        # odd readings are ignored for further processing
        print(f"Reading {reading} is odd -> skipped")
```

```
Reading 10 is even -> square = 100
Reading 13 is odd -> skipped
Reading 4 is even -> square = 16
Reading 7 is odd -> skipped
Reading 22 is even -> square = 484
Reading 9 is odd -> skipped
Reading 0 is even -> square = 0
Reading -2 is even -> square = 4
```

Code Explanation :

- A list of sensor readings is iterated using a for loop.
- The modulus operator % checks for even numbers.
- Squares of even numbers are calculated using **.
- Output is printed in a readable format.

PROMPT:

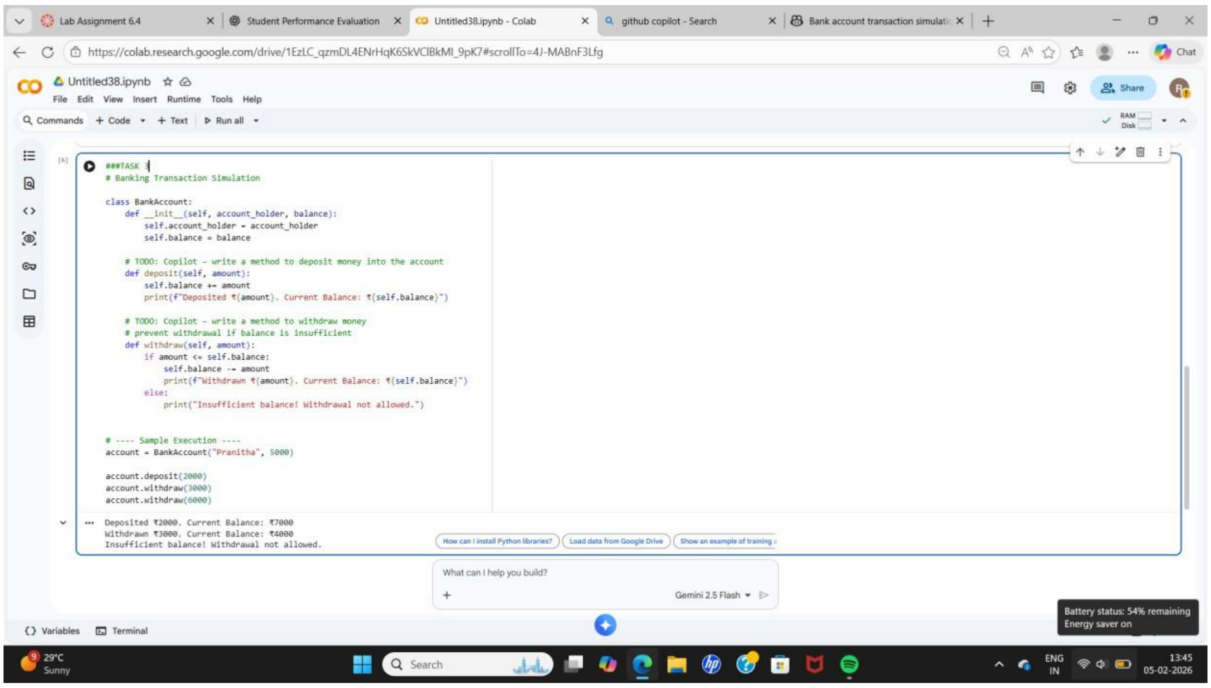
Iterate through the list.

Check if the number is even.

Calculate the square of even numbers.

Print the result in a readable format.

Task 3: Banking Transaction Simulation



```python
###TASK 3
# Banking Transaction Simulation

class BankAccount:
    def __init__(self, account_holder, balance):
        self.account_holder = account_holder
        self.balance = balance

    # TODO: Copilot - write a method to deposit money into the account
    def deposit(self, amount):
        self.balance += amount
        print(f"Deposited ₹{amount}. Current Balance: ₹{self.balance}")

    # TODO: Copilot - write a method to withdraw money
    # prevent withdrawal if balance is insufficient
    def withdraw(self, amount):
        if amount <= self.balance:
            self.balance -= amount
            print(f"Withdrawn ₹{amount}. Current Balance: ₹{self.balance}")
        else:
            print("Insufficient balance! Withdrawal not allowed.")


# ---- Sample Execution ----
account = BankAccount("Pranitha", 5000)

account.deposit(2000)
account.withdraw(3000)
account.withdraw(6000)
```

```
Deposited ₹2000. Current Balance: ₹7000
Withdrawn ₹3000. Current Balance: ₹4000
Insufficient balance! Withdrawal not allowed.
```

Untitled38.ipynb
File Edit View Insert Runtime Tools Help
Commands + Code + Text Run all
How can I install Python libraries?
Load data from Google Drive
Show an example of training
What can I help you build?
Gemini 2.5 Flash
Battery status: 54% remaining Energy saver on
Variables
Terminal

Code Explanation:

- BankAccount class stores account holder name and balance.
- deposit() adds money to balance.
- withdraw() uses if-else to check balance before withdrawing.
- Prevents invalid withdrawals and shows clear messages.

PROMPT:

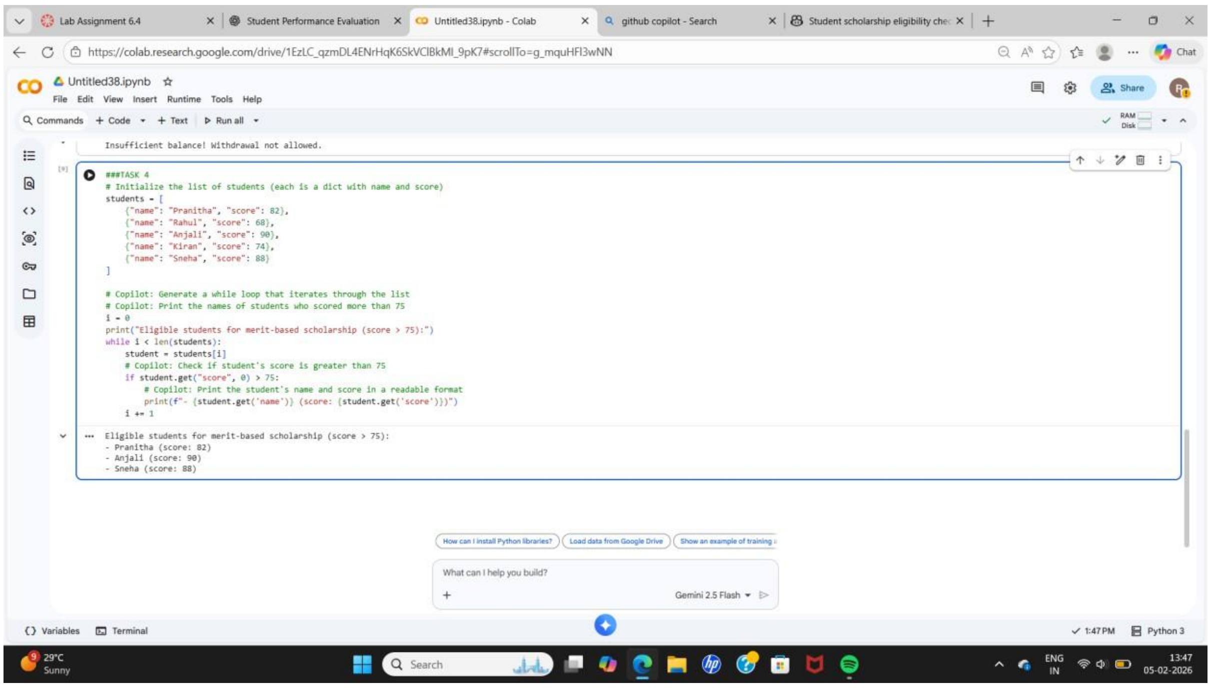
Write methods to deposit money.

Write a withdrawal method.

Prevent withdrawal if balance is insufficient.

Display user-friendly messages.

Task 4: Student Scholarship Eligibility Check



```
Insufficient balance! Withdrawal not allowed.
```

```
###TASK 4
# Initialize the list of students (each is a dict with name and score)
students = [
    {"name": "Pranitha", "score": 82},
    {"name": "Rahul", "score": 68},
    {"name": "Anjali", "score": 90},
    {"name": "Kiran", "score": 74},
    {"name": "Sneha", "score": 88}
]

# Copilot: Generate a while loop that iterates through the list
# Copilot: Print the names of students who scored more than 75
i = 0
print("Eligible students for merit-based scholarship (score > 75):")
while i < len(students):
    student = students[i]
    # Copilot: Check if student's score is greater than 75
    if student.get("score", 0) > 75:
        # Copilot: Print the student's name and score in a readable format
        print(f"- {student.get('name')} (score: {student.get('score')})")
    i += 1
```

```
Eligible students for merit-based scholarship (score > 75):
- Pranitha (score: 82)
- Anjali (score: 90)
- Sneha (score: 88)
```

Lab Assignment 6.4
Student Performance Evaluation
Untitled38.ipynb - Colab
github copilot - Search
Student scholarship eligibility chec
https://colab.research.google.com/drive/1EzLC_qzmDL4ENrHqK6SkVClBkMI_9pK7#scrollTo=g_mquHFl3wNN
Untitled38.ipynb
File Edit View Insert Runtime Tools Help
Commands + Code + Text Run all
Share
How can I install Python libraries?
Load data from Google Drive
Show an example of training
What can I help you build?
Gemini 2.5 Flash
Variables Terminal
1:47 PM Python 3
29°C Sunny
Search
ENG IN
13:47 05-02-2026

Code Explanation:

- A list of dictionaries stores student data.
- A while loop iterates using an index.
- if condition checks scholarship eligibility.
- Names of eligible students are printed.

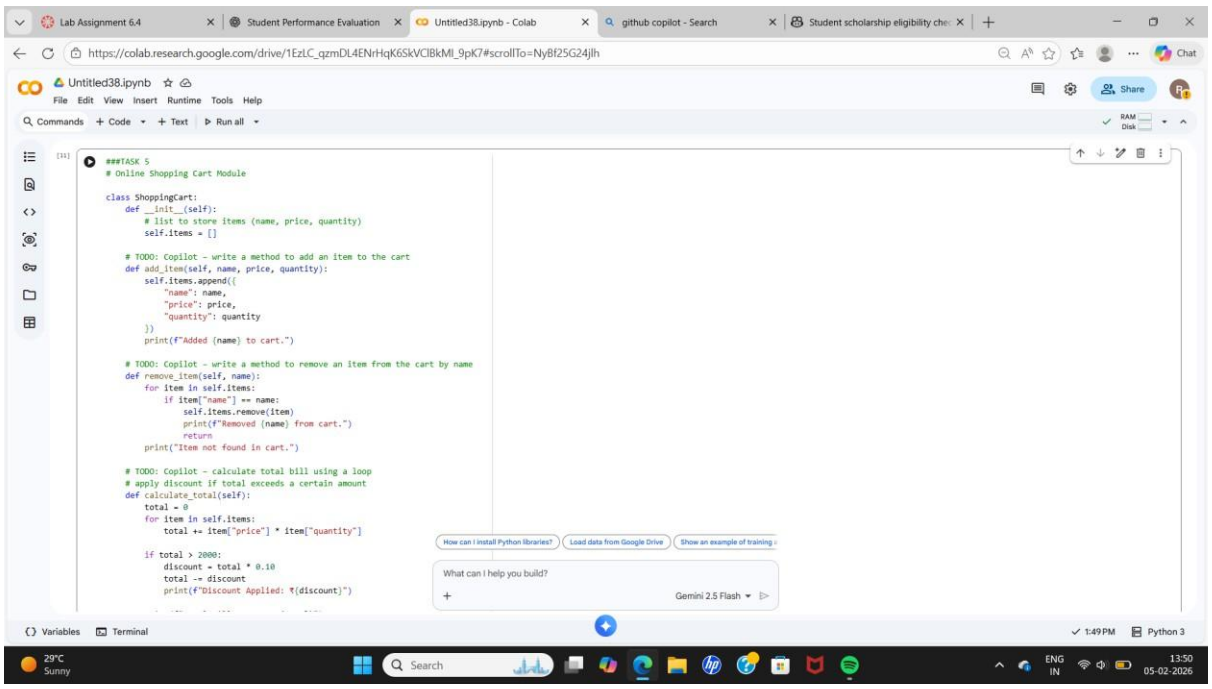
PROMPT:

Use a while loop to iterate through students list.

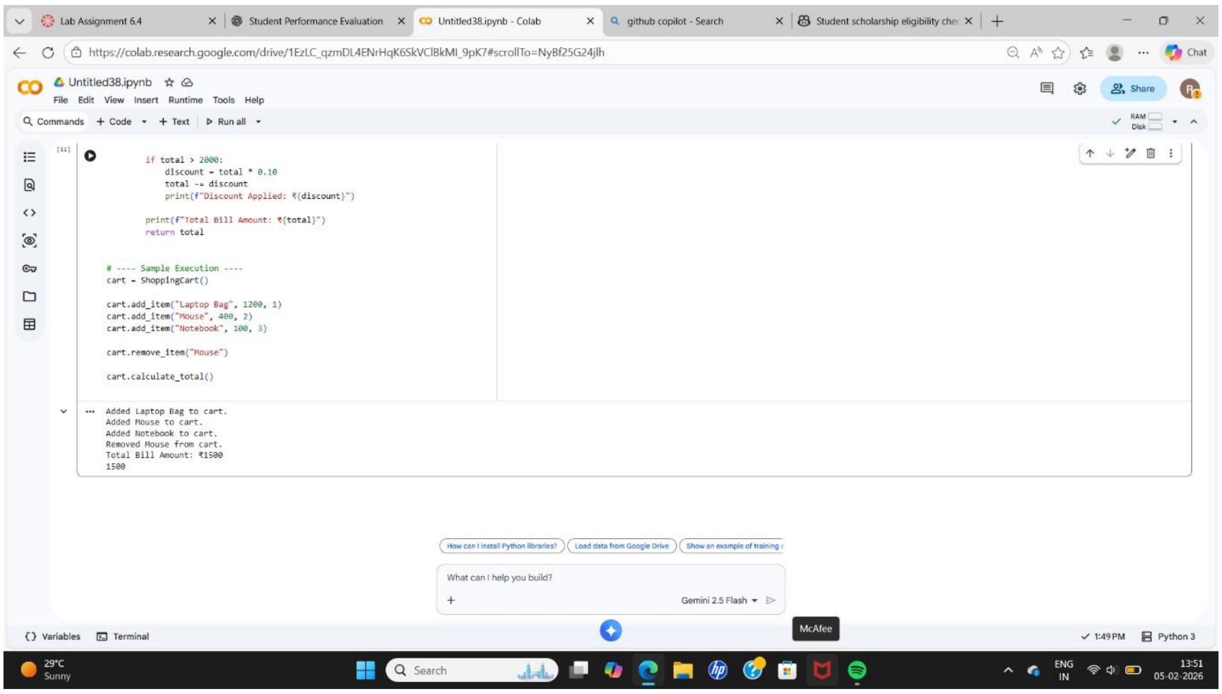
Check score greater than 75.

Print eligible student names.

Task 5: Online Shopping Cart Module



```python
###TASK 5
# Online Shopping Cart Module

class ShoppingCart:
    def __init__(self):
        # list to store items (name, price, quantity)
        self.items = []

    # TODO: Copilot - write a method to add an item to the cart
    def add_item(self, name, price, quantity):
        self.items.append({
            "name": name,
            "price": price,
            "quantity": quantity
        })
        print(f"Added {name} to cart.")

    # TODO: Copilot - write a method to remove an item from the cart by name
    def remove_item(self, name):
        for item in self.items:
            if item["name"] == name:
                self.items.remove(item)
                print(f"Removed {name} from cart.")
                return
        print("Item not found in cart.")

    # TODO: Copilot - calculate total bill using a loop
    # apply discount if total exceeds a certain amount
    def calculate_total(self):
        total = 0
        for item in self.items:
            total += item["price"] * item["quantity"]

        if total > 2000:
            discount = total * 0.10
            total -= discount
            print(f"Discount Applied: ₹{discount}")
```



```python
        if total > 2000:
            discount = total * 0.10
            total -= discount
            print(f"Discount Applied: ₹{discount}")

        print(f"Total Bill Amount: ₹{total}")
        return total


# ---- Sample Execution ----
cart = ShoppingCart()

cart.add_item("Laptop Bag", 1200, 1)
cart.add_item("Mouse", 400, 2)
cart.add_item("Notebook", 100, 3)

cart.remove_item("Mouse")

cart.calculate_total()
```

```
Added Laptop Bag to cart.
Added Mouse to cart.
Added Notebook to cart.
Removed Mouse from cart.
Total Bill Amount: ₹1500
1500
```

Code Explanation:

- Shopping Cart class stores items in a list.
- Each item includes name, price, and quantity.
- add_item() adds products to the cart.

- remove_item() removes products by name.
- calculate_total() computes bill using a loop and applies discount using if.

PROMPT:

Create methods to add items.

Remove items from cart.

Calculate total using a loop.

Apply discount if total exceeds limit.