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BATCH 16

SCHOOL OF COMPUTER SCIENCE AND ARTIFICIAL INTELLIGENCE		DEPARTMENT OF COMPUTER SCIENCE ENGINEERING	
ProgramName:B. Tech		**Assignment Type: Lab**	**AcademicYear:**2025-2026
CourseCoordinatorName	Venkataramana Veeramsetty		
Instructor(s)Name	Dr. V. Venkataramana (Co-ordinator) Dr. T. Sampath Kumar Dr. Pramoda Patro Dr. Brij Kishor Tiwari Dr.J.Ravichander Dr. Mohammand Ali Shaik Dr. Anirodh Kumar Mr. S.Naresh Kumar Dr. RAJESH VELPULA Mr. Kundhan Kumar Ms. Ch.Rajitha Mr. M Prakash Mr. B.Raju Intern 1 (Dharma teja) Intern 2 (Sai Prasad) Intern 3 (Sowmya) NS_2 (Mounika)		
CourseCode	24CS002PC215	**CourseTitle**	AI Assisted Coding
Year/Sem	II/I	**Regulation**	R24
Date and Day of Assignment	Week3 - Thursday	**Time(s)**	
Duration	2 Hours	**Applicableto Batches**	
AssignmentNumber:6.4(Present assignment number)/**24**(Total number of assignments)			

Q.No.	Question	*ExpectedTime to complete*
1	Lab 6: AI-Based Code Completion – Classes, Loops, and Conditionals **Lab Objectives:** • To explore AI-powered auto-completion features for core Python constructs. • To analyze how AI suggests logic for class definitions, loops, and conditionals. • To evaluate the completeness and correctness of code generated by AI assistants. **Lab Outcomes (LOs):**	Week3 - Thursday

After completing this lab, students will be able to:

- Use AI tools to generate and complete class definitions and methods.
- Understand and assess AI-suggested loops for iterative tasks.
- Generate conditional statements through prompt-driven suggestions.
- Critically evaluate AI-assisted code for correctness and clarity.

Task Description #1:
• Start a Python class named Student with attributes name, roll_number, and marks. Prompt GitHub Copilot to complete methods for displaying details and checking if marks are above average.
Expected Outcome #1:
• Completed class with Copilot-generated methods like display_details() and is_passed(), demonstrating use of if-else conditions.

Task Description #2:
• Write the first two lines of a for loop to iterate through a list of numbers. Use a comment prompt to let Copilot suggest how to calculate and print the square of even numbers only.
Expected Outcome #2:
• A complete loop generated by Copilot with conditional logic (if number % 2 == 0) and appropriate output.

Task Description #3:
• Create a class called BankAccount with attributes account_holder and balance. Use Copilot to complete methods for deposit(), withdraw(), and check for insufficient balance.
Expected Outcome #3:
• Functional class with complete method definitions using if conditions and self attributes. Code should prevent overdrawing.

Task Description #4:
• Define a list of student dictionaries with keys name and score. Ask Copilot to write a while loop to print the names of students who scored more than 75.
Expected Outcome #4:
• A complete while loop generated by Copilot with proper condition checks and formatted output.

Task Description #5:
• Begin writing a class ShoppingCart with an empty items list. Prompt Copilot to generate methods to add_item, remove_item, and use a loop to calculate the total bill using conditional discounts.
Expected Outcome #5:
• A fully implemented ShoppingCart class with Copilot-generated loops and if-else statements handling item management and discount logic.

Note: Report should be submitted a word document for all tasks in a single document with prompts, comments & code explanation, and output and if required, screenshots

Evaluation Criteria:

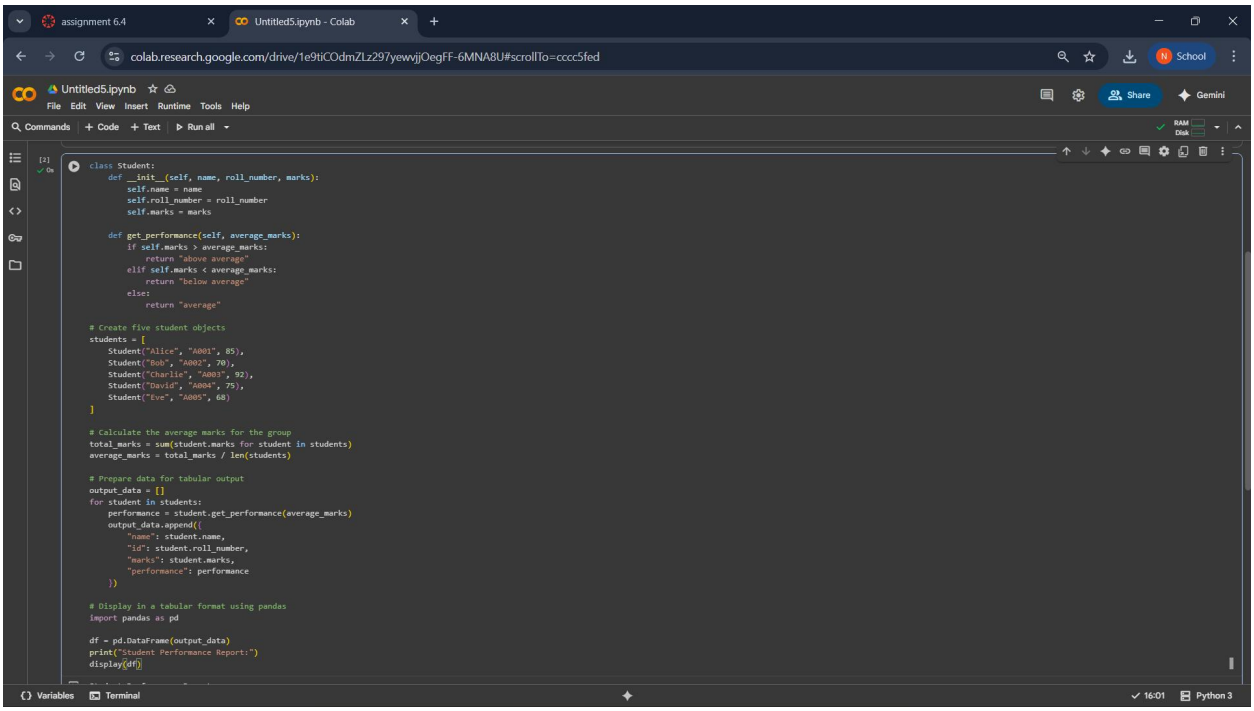
Criteria	Max Marks
Class	1
Loop	1
condition	0.5
Total	**2.5 Marks**

TASK 1 :

PROMPT :

write a python code to Start a Python class named Student with attributes name, roll_number, and marks. check if marks are above average or not.

CODE :

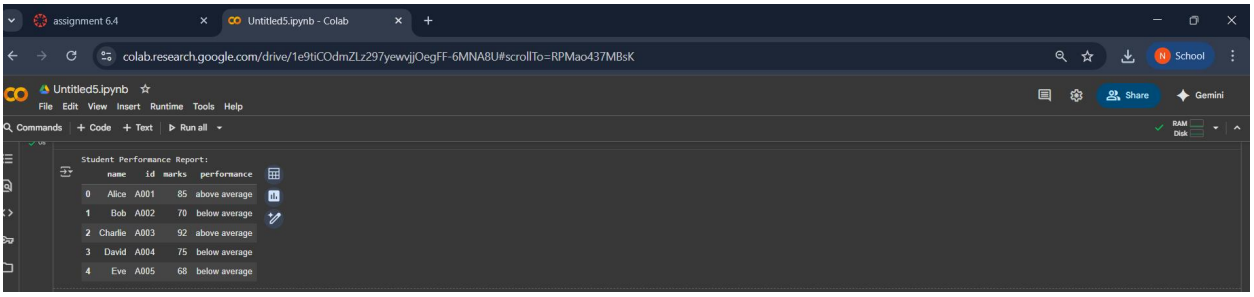


```python
class Student:
    def __init__(self, name, roll_number, marks):
        self.name = name
        self.roll_number = roll_number
        self.marks = marks

    def get_performance(self, average_marks):
        if self.marks > average_marks:
            return "above average"
        elif self.marks < average_marks:
            return "below average"
        else:
            return "average"

# Create five student objects
students = [
    Student("Alice", "A001", 85),
    Student("Bob", "A002", 70),
    Student("Charlie", "A003", 92),
    Student("David", "A004", 75),
    Student("Eve", "A005", 68)
]

# Calculate the average marks for the group
total_marks = sum(student.marks for student in students)
average_marks = total_marks / len(students)

# Prepare data for tabular output
output_data = []
for student in students:
    performance = student.get_performance(average_marks)
    output_data.append({
        "name": student.name,
        "id": student.roll_number,
        "marks": student.marks,
        "performance": performance
    })

# Display in a tabular format using pandas
import pandas as pd

df = pd.DataFrame(output_data)
print("Student Performance Report:")
display(df)
```

EXPLANATION :

- **The Student class stores name, roll_number, and marks using self.**
- **The method check_above_average() uses an if condition to compare marks against an average (default = 50).**
- **9 It prints whether the student's marks are above average or not.**

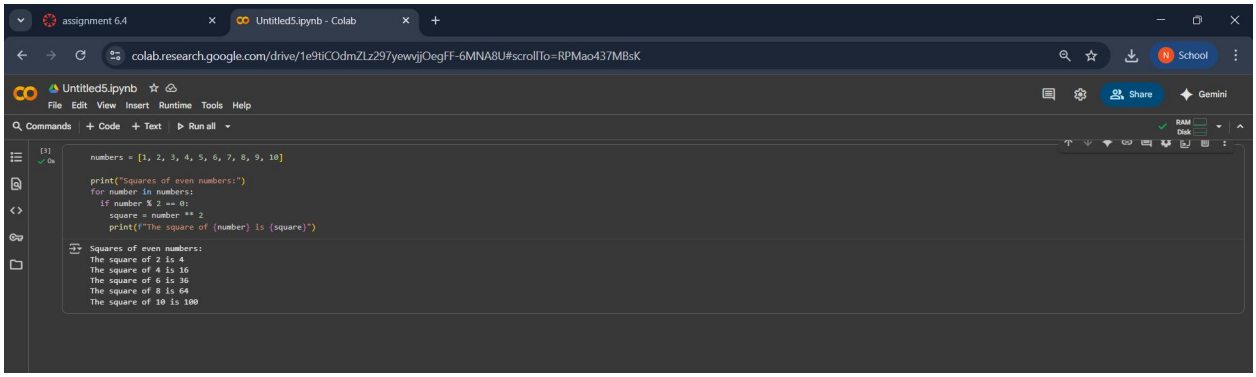
OUTPUT :



TASK 2 :

PROMPT :

write a python code to calculate and print the square of even numbers only.use conditional logic (if number % 2 == 0) and give appropriate output.



CODE & OUTPUT:

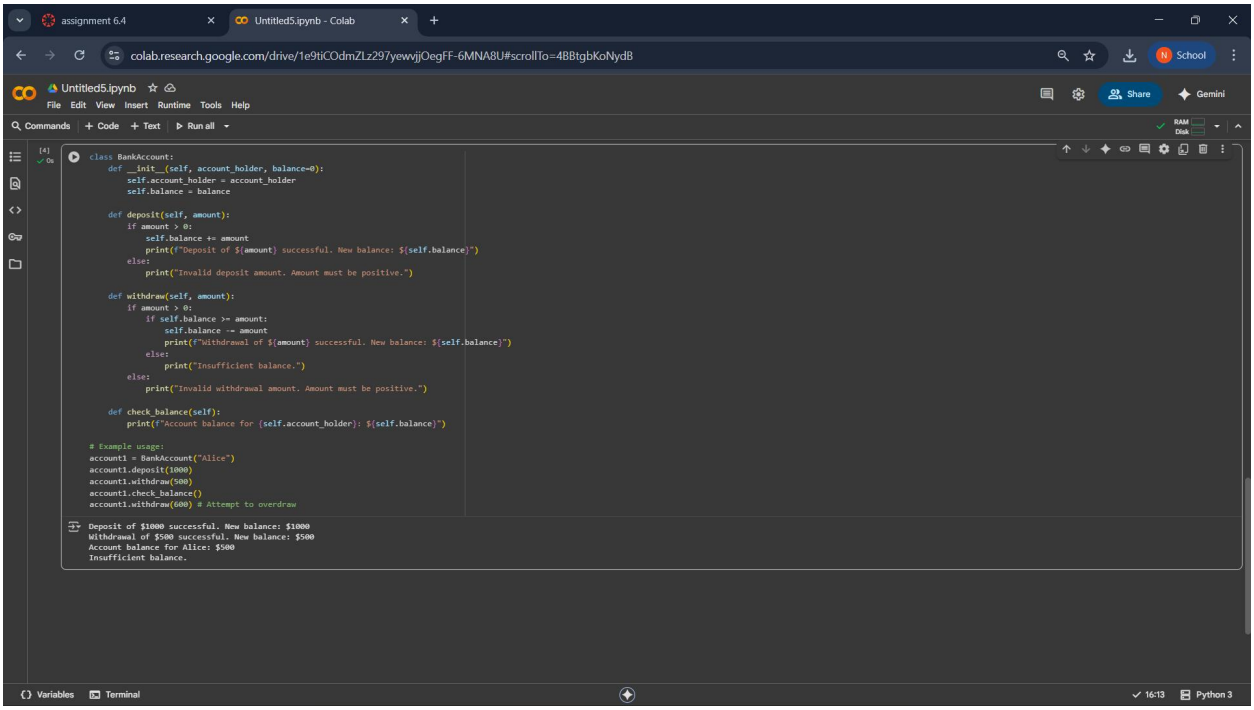
EXPLANATION :

- **The program loops through numbers from 1 to 10 using for number in range(1, 11).**
- **The condition if number % 2 == 0 checks whether the number is even.**
- **If the number is even, its square is calculated using number ** 2.**
- **Finally, the program prints the number along with its square**

TASK 3 :

PROMPT :

Create a class called BankAccount with attributes account_holder and balance and complete methods for deposit(), withdraw(), and check for insufficient balance.code should be Functional class with complete method definitions using if conditions and self attributes and should prevent overdrawing.



CODE & OUTPUT :

EXPLANATION :

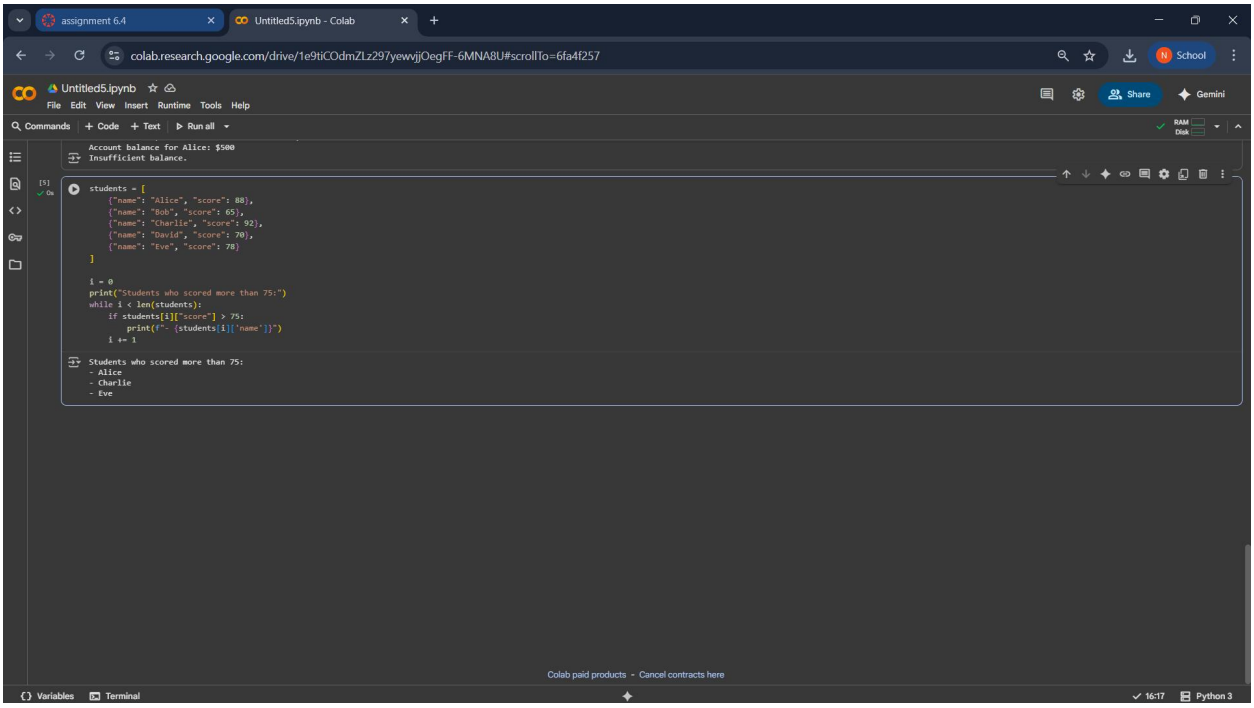
- The class keeps account_holder and balance as attributes using self. deposit() adds money if the amount is positive.
- withdraw() uses if conditions to prevent overdrawing and invalid amounts.
- check_balance() shows the account holder’s name and current balance.

TASK 4 :

PROMPT :

Create a class called BankAccount with attributes account_holder and balance and complete methods for deposit(), withdraw(), and check for insufficient balance.code should be Functional class with complete method definitions using if conditions and self attributes and should prevent overdrawing.

CODE & OUTPUT :



EXPLANATION :

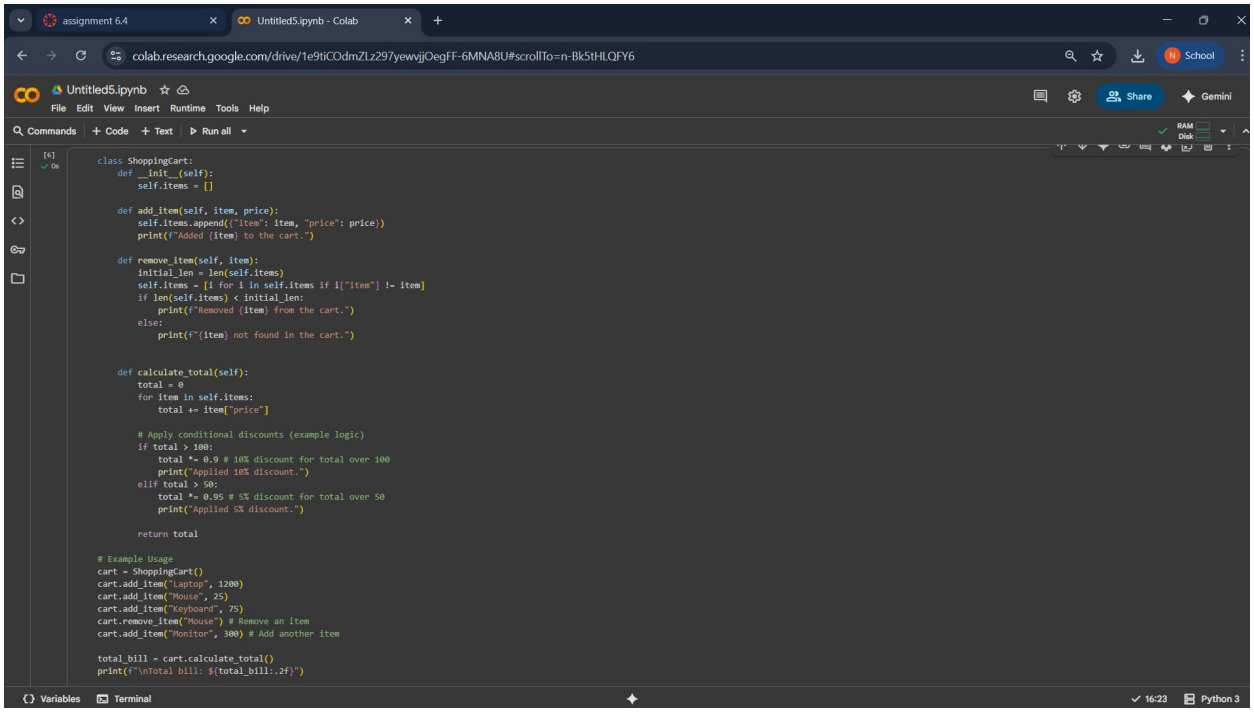
- The class uses self.account_holder and self.balance to store account details.
- deposit() and withdraw() modify the balance with if checks for valid amounts.
- The withdraw method prevents overdrawing by checking if the requested amount exceeds the balance.

TASK 5 :

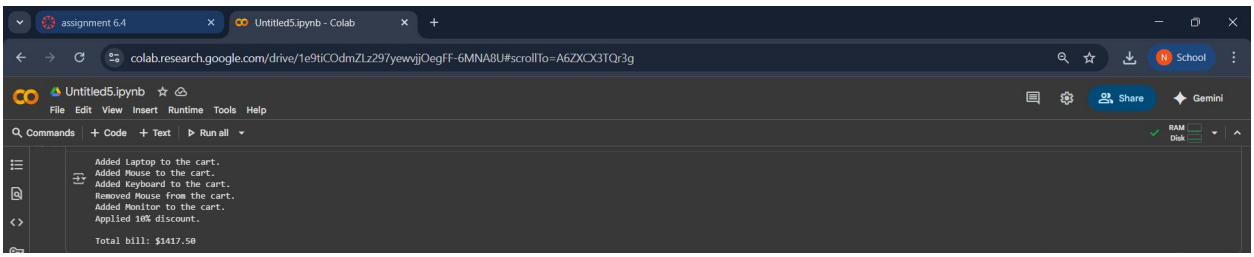
PROMPT :

Begin writing a class ShoppingCart with an empty items list. generate methods to add_item, remove_item, and use a loop to calculate the total bill using conditional discounts.I need a fully implemented ShoppingCart class with loops and if-else statements. handling item management an9 d discount logic.Explain the code in 3 lines.

CODE :



OUTPUT :



EXPLANATION :

The class stores items in a list of (name, price) pairs, with methods to add and remove items.

A loop iterates over all items to calculate the total.

If the total exceeds 500 or 1000, conditional discounts are applied using if-else logic.