

# AI Assisted Coding LAB:-6.4

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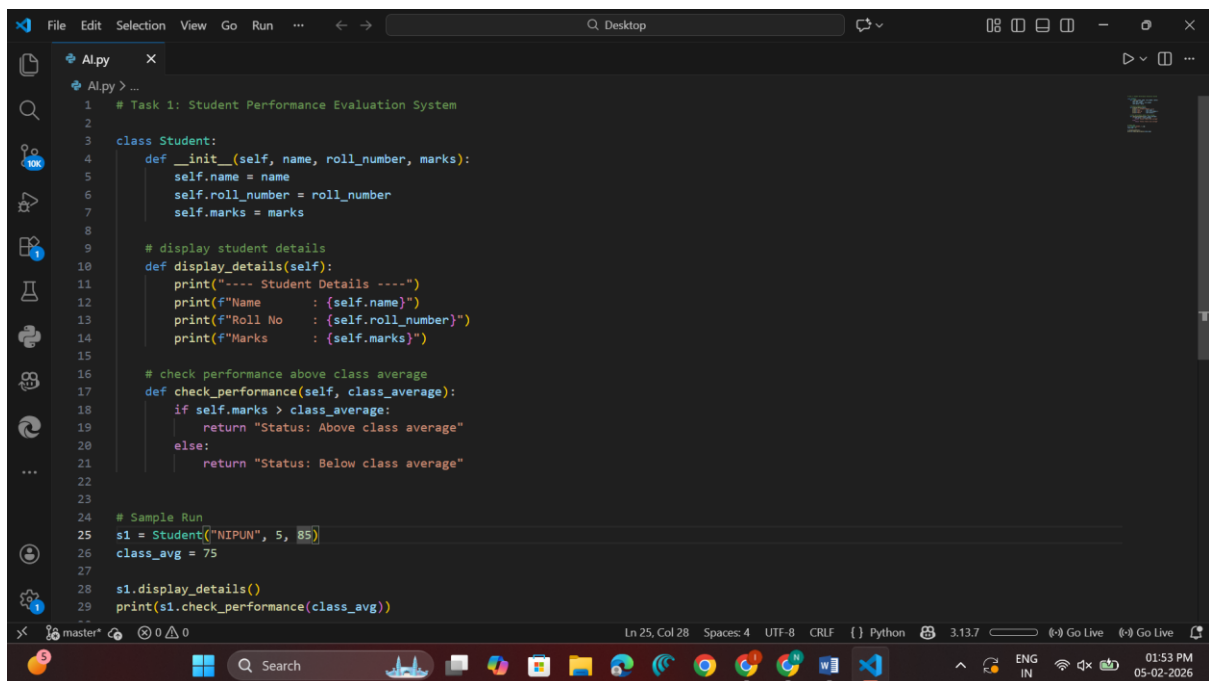
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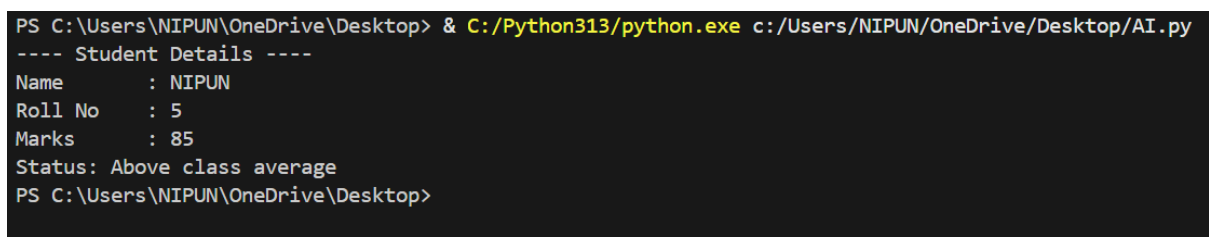
⇒ TASK 1:-

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```
File Edit Selection View Go Run ... Desktop
Alpy X
Alpy > ...
1 # Task 1: Student Performance Evaluation System
2
3 class Student:
4     def __init__(self, name, roll_number, marks):
5         self.name = name
6         self.roll_number = roll_number
7         self.marks = marks
8
9     # display student details
10    def display_details(self):
11        print("---- Student Details ----")
12        print(f"Name      : {self.name}")
13        print(f"Roll No   : {self.roll_number}")
14        print(f"Marks    : {self.marks}")
15
16    # check performance above class average
17    def check_performance(self, class_average):
18        if self.marks > class_average:
19            return "Status: Above class average"
20        else:
21            return "Status: Below class average"
22
23
24 # Sample Run
25 s1 = Student("NIPUN", 5, 85)
26 class_avg = 75
27
28 s1.display_details()
29 print(s1.check_performance(class_avg))
Ln 25, Col 28 Spaces: 4 UTF-8 CRLF Python 3.13.7 ENG IN 01:53 PM 05-02-2026
```

OUTPUT:-



```
PS C:\Users\NIPUN\OneDrive\Desktop> C:/Python313/python.exe c:/Users/NIPUN/OneDrive/Desktop/AI.py
---- Student Details ----
Name      : NIPUN
Roll No   : 5
Marks    : 85
Status: Above class average
PS C:\Users\NIPUN\OneDrive\Desktop>
```

## Summary :-

This task focused on building a basic academic evaluation system using a Python class.

A Student class was created with attributes name, roll\_number, and marks.

AI-based code completion was used to generate methods for:

- Displaying student details
- Evaluating student performance using conditional logic

The AI successfully generated:

- Proper use of self for class attributes
- if-else conditions for performance checking
- Clean and readable method structures

This task demonstrated how AI can assist in building structured class definitions and logic-based methods efficiently.

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## ⇒ TASK 2:-

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```
# Task 2: Data Processing in a Monitoring System

sensor_readings = [10, 15, 20, 23, 30, 45, 60]

for reading in sensor_readings:
    # identify even numbers, calculate square, and print result
    if reading % 2 == 0:
        square = reading * reading
        print(f"Even Reading: {reading} | Square: {square}")
```

## OUTPUT:-

```
PS C:\Users\NIPUN\OneDrive\Desktop> & C:/Python313/python.exe c:/Users/NIPUN/OneDrive/Desktop/AI.py
Even Reading: 10 | Square: 100
Even Reading: 20 | Square: 400
Even Reading: 30 | Square: 900
Even Reading: 60 | Square: 3600
PS C:\Users\NIPUN\OneDrive\Desktop>
```

## Summary:-

This task involved processing numerical sensor data using loops and conditions. A for loop was initiated manually, and AI-based completion was guided using comments.

The AI generated logic to:

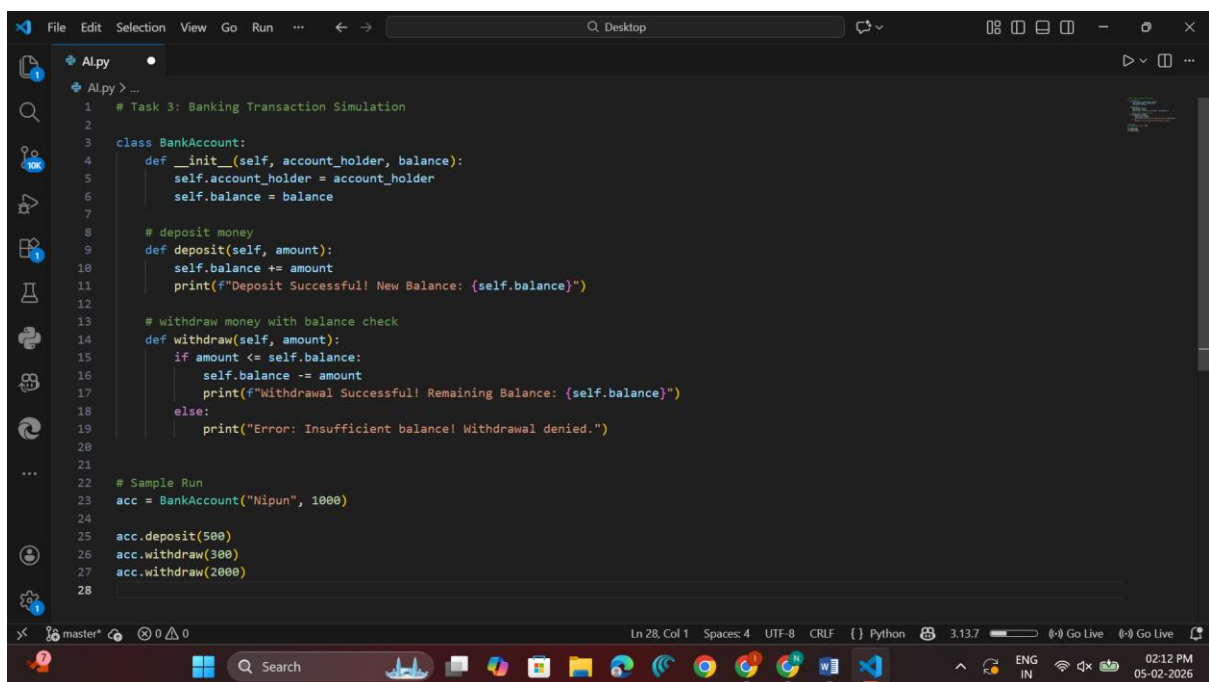
- Identify even numbers using the modulus (%) operator
- Calculate the square of even values
- Print results in a readable format

This task demonstrated AI's ability to understand loop structures, conditional logic, and mathematical operations through prompt-driven guidance.

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## ⇒ TASK 3:-

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```
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Alpy
Alpy > ...
1 # Task 3: Banking Transaction Simulation
2
3 class BankAccount:
4     def __init__(self, account_holder, balance):
5         self.account_holder = account_holder
6         self.balance = balance
7
8     # deposit money
9     def deposit(self, amount):
10        self.balance += amount
11        print(f'Deposit Successful! New Balance: {self.balance}')
12
13    # withdraw money with balance check
14    def withdraw(self, amount):
15        if amount <= self.balance:
16            self.balance -= amount
17            print(f'Withdrawal Successful! Remaining Balance: {self.balance}')
18        else:
19            print("Error: Insufficient balance! Withdrawal denied.")
20
21
22 # Sample Run
23 acc = BankAccount("Nipun", 1000)
24
25 acc.deposit(500)
26 acc.withdraw(300)
27 acc.withdraw(2000)
28
```

## OUTPUT:-

```
PS C:\Users\NIPUN\OneDrive\Desktop> & C:/Python313/python.exe c:/Users/NIPUN/OneDrive/Desktop/AI.py
Deposit Successful! New Balance: 1500
Withdrawal Successful! Remaining Balance: 1200
Error: Insufficient balance! Withdrawal denied.
PS C:\Users\NIPUN\OneDrive\Desktop> 
```

## Summary:-

In this task, a BankAccount class was created to simulate real-world banking operations. The class included attributes for account\_holder and balance.

AI-assisted code completion generated methods for:

- Depositing money
- Withdrawing money
- Preventing withdrawals when balance is insufficient

The AI used:

- Conditional statements (if-else)
- Class attributes via self
- User-friendly output messages

This task showed how AI can help implement real-life business logic safely and logically.

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## ⇒ TASK 4:-

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```
# Task 4: Student Scholarship Eligibility Check

students = [
    {"name": "Nipun", "score": 80},
    {"name": "Neha", "score": 70},
    {"name": "Rahul", "score": 90},
    {"name": "Priya", "score": 76}
]

i = 0
# iterate through list and print students with score > 75
print("Scholarship Eligible Students:")
while i < len(students):
    if students[i]["score"] > 75:
        print(students[i]["name"])
    i += 1
```

## Output:-

```
PS C:\Users\NIPUN\OneDrive\Desktop> & C:/Python313/python.exe c:/Users/NIPUN/OneDrive/Desktop/AI.py
Scholarship Eligible Students:
Nipun
Rahul
Priya
PS C:\Users\NIPUN\OneDrive\Desktop> █
```

## Summary:-

This task focused on using loops and conditionals with structured data. A list of dictionaries was created to store student names and scores.

AI-based completion was used to generate a while loop that:

- Iterates through the list
- Checks eligibility using conditions
- Prints names of students scoring more than 75

The task demonstrated AI's ability to manage:

- Index-based iteration
- Data structure access
- Logical filtering using conditions

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## ⇒ TASK 5:-

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Alpy
Alpy > ShoppingCart calculate_total
1 # Task 5: Online Shopping Cart Module
2
3 class ShoppingCart:
4     def __init__(self):
5         self.items = []
6
7     # add item to cart
8     def add_item(self, name, price, quantity):
9         self.items.append({
10             "name": name,
11             "price": price,
12             "quantity": quantity
13         })
14         print(f"{name} added to cart.")
15
16     # remove item from cart
17     def remove_item(self, name):
18         self.items = [item for item in self.items if item["name"] != name]
19         print(f"{name} removed from cart.")
20
21     # calculate total bill
22     def calculate_total(self):
23         total = 0
24         for item in self.items:
25             total += item["price"] * item["quantity"]
26
27     # apply discount condition
28     if total > 1000:
29         print("Discount Applied: 10%")
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PS C:\Users\NIPUN\OneDrive\Desktop> & C:/Python313/python.exe c:/Users/NIPUN/OneDrive/Desktop/AI.py
Laptop added to cart.
Mouse added to cart.
Keyboard added to cart.

--- Cart Items ---
Laptop | Price: 60000 | Qty: 1
Mouse | Price: 500 | Qty: 2
Keyboard | Price: 1000 | Qty: 1
Discount Applied: 10%

Total Bill: 55800.0
Mouse removed from cart.

--- Cart Items ---
Laptop | Price: 60000 | Qty: 1
Keyboard | Price: 1000 | Qty: 1
Discount Applied: 10%

Updated Total Bill: 54900.0
PS C:\Users\NIPUN\OneDrive\Desktop> █
```

## Summary:-

This task involved building a simplified e-commerce shopping cart system. A ShoppingCart class was created with an empty list to store cart items.

AI-assisted completion generated methods for:

- Adding items to the cart
- Removing items from the cart
- Calculating total bill using loops
- Applying conditional discounts

The AI correctly implemented:

- Loop-based total calculation
- Conditional discount logic
- Data structure handling
- Object-oriented design principles

This task demonstrated AI's effectiveness in building scalable, real-world application logic.