

SCHOOL OF COMPUTER SCIENCE AND ARTIFICIAL INTELLIGENCE		DEPARTMENT OF COMPUTER SCIENCE ENGINEERING	
Program Name: B. Tech		Assignment Type: Lab	
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Course Code	24CS002PC215	Course Title	AI Assisted Coding
Year/Sem	II/I	Regulation	R24
Date and Day of Assignment	06-08-2025	Time(s)	
Duration	2 Hours	Applicable to Batches	
AssignmentNumber: 6.5(Present assignment number)/24(Total number of assignments)			
Q.No.	Question		<i>Expected Time to complete</i>
1	Lab 6: AI-Based Code Completion: Working with suggestions for classes, loops, conditionals <u>Lab Assignment 1: Intelligent Code Completion for Object-Oriented Programming</u> Objective: To explore AI-powered code assistants for writing Python classes, constructors, and methods through intelligent suggestions. Suppose that you are hired as an intern at a tech company that develops inventory management systems. Your manager asks you to create a Product class and a Warehouse class with some basic methods. You have decided to use AI-powered code suggestions to help speed up development and reduce syntax errors. Tasks to be completed are as below 1. Setup AI Coding Tool: <ul style="list-style-type: none"> • Install and configure GitHub Copilot or Kite with VS Code or JetBrains IDE. • Enable real-time code suggestions. 2. Class Design Using AI Assistance: <ul style="list-style-type: none"> • Begin defining a Product class with attributes: name, price, quantity. • Use the AI suggestion feature to automatically complete the <code>__init__()</code> method. • Add a method <code>calculate_value()</code> to return <code>price * quantity</code>. 		15.08.2025 EOD

Code:

```
1 class Product:
2     def __init__(self, name, price, quantity):
3         self.name = name
4         self.price = price
5         self.quantity = quantity
6
7     def calculate_value(self):
8         return self.price * self.quantity
9
10    def __str__(self):
11        return f"Product(name={self.name}, price={self.price}, quantity={self.quantity})"
12
```

• Output:

The screenshot shows the VS Code interface with the terminal tab selected. The terminal window displays the following command and its output:

```
PROBLEMS OUTPUT DEBUG CONSOLE TERMINAL PORTS
PS C:\PROGRAMMES VS CODE\AI coding> & "c:\Users\venkatesh\AppData\Local\Programs\Python\Python311\python.exe" "c:\PROGRAMMES VS CODE\AI coding\bundled\libs\debugpy\launcher" '49779' '--' 'c:\PROGRAMMES VS CODE\AI coding\class6_5.py'
PS C:\PROGRAMMES VS CODE\AI coding>
```

3. Create Another Class:

- Define a Warehouse class with a list of Product objects.
- Use code completion to help implement:
 - A method to add a product.
 - A method to display the most valuable product.

Code:

```
13 class Warehouse:
14     def __init__(self):
15         self.products = []
16
17     def add_product(self, product):
18         if isinstance(product, Product):
19             self.products.append(product)
20
21     def total_value(self):
22         return sum(product.calculate_value() for product in self.products)
23
24     def __str__(self):
25         return f"Warehouse([{str(product)} for product in self.products])"
```

- Output:
-

```
i015 MS-PYTHON_DEBUGPY-2025.10.0-WIN32-X64\bundled\libs\debugpy\launcher" 6949 -- "c:\PROGRAMMES VS CODE\AI coding\class6_5.py"
Warehouse(['Product(name=Laptop, price=1000, quantity=5)', 'Product(name=Phone, price=500, quantity=10)'])
PS C:\PROGRAMMES VS CODE\AI coding>
```

4. Reflection:

- Identify how much of the code was completed by AI and what manual edits were needed.
- Comment on the relevance and accuracy of AI suggestions.

Comment:

- The AI suggestions were relevant and accurate in building a basic inventory management system. It correctly identified the need for Product and Warehouse classes and implemented methods for adding products and calculating total value. The code is well-structured and follows object-oriented principles.
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Requirements:

- VS Code with Github Copilot or Cursor API and/or Google Colab with Gemini

	<p>Deliverables:</p> <ul style="list-style-type: none"> • Python script with both classes and comments on AI-generated suggestions. • Short report (1 page) summarizing your experience with AI code completion. • <p>Summarise;</p> <ul style="list-style-type: none"> • The AI has built a simple inventory management system with Product and Warehouse classes. • It allows adding products to the warehouse and calculating their total value. • • The code demonstrates basic object-oriented programming principles in Python. • It showcases how to model real-world entities (products and a warehouse) using classes. • The implementation is straightforward, making it easy to understand and extend. • how much of the code was completed by AI and what manual edits were needed. • 	
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