

# AI ASSISTED CODING

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BATCH-14

ASSIGNMENT – 2.4

Task 1: Use Cursor AI to generate a Python class Book with attributes title, author, and a summary () method.

Prompt : “Generate a Python class named Book with attributes title, author, and a method summary() that returns a formatted string with the title and author.”

Code and output :

The screenshot shows the Visual Studio Code interface with the "AI Assisted Coding" extension open. In the center, there's a code editor window displaying the following Python code:

```
1  # Write a Python program to check whether someone is eligible to vote or not.
2  # Author: [REDACTED]
3  # Date: [REDACTED]
4
5  class Book:
6      def __init__(self, title, author):
7          self.title = title
8          self.author = author
9
10     def summary(self):
11         return f'{self.title} is written by {self.author}'
```

To the right of the code editor, there's a sidebar titled "Build with Agent". It includes a message: "All responses may be incomplete. Generate Agent Instructions to refine AI with your feedback." Below this is a "Python Dev..." button. At the bottom of the sidebar, there's a "Build" button with a progress bar labeled "Building your codebase...".

At the bottom of the screen, the Windows taskbar is visible, showing icons for File Explorer, Task View, and various system status indicators like battery level and network connection.

Task 2: Use Gemini and Cursor AI to generate code that sorts a list of dictionaries by a key.

Prompt: Write Python code to sort a list of dictionaries by the key age. Explain the code briefly.

Code and output :

A screenshot of the Visual Studio Code (VS Code) interface. The left sidebar shows extensions like 'Python' and 'AI-Assisted Coding'. The main editor area contains the following Python code:

```
242.py - Write Python code to sort a list of dictionaries by the key age. Explain the code briefly.
1
2  # Write Python code to sort a list of dictionaries by the key age. Explain the code briefly.
3
4 users = [
5     {"name": "Aisha", "age": 25},
6     {"name": "Bobby", "age": 30},
7     {"name": "Mehan", "age": 35}
8 ]
9
10 def sort_by_age(user_list):
11     return sorted(user_list, key=lambda user: user["age"])
12
13 if __name__ == "__main__":
14     sorted_users = sort_by_age(users)
15     print(sorted_users)
```

The bottom right corner features a 'Build with Agent' panel with a 'Describe what to build next' input field and a 'Agent' dropdown set to 'Auto'. The status bar at the bottom shows 'In 1 Col 1 - Spaces 4 - UTF-8 - 0.0.7 - Python - 3.12.9 (Miniconda) - 1449 - 19-01-2024'.

Task 3: Ask Gemini to generate a calculator using functions and explain how it works.

Prompt: Write a Python calculator program using separate functions for add, subtract, multiply, and divide. Then explain how the program works step by step.

Code and Output:

A screenshot of the Visual Studio Code (VS Code) interface. The left sidebar shows extensions like 'Python' and 'AI-Assisted Coding'. The main editor area contains the following Python code:

```
243.py - Write a Python calculator program using separate functions for add, subtract, multiply, and divide. Then explain how the program works step by step.
1
2
3 def add(a, b):
4     return a + b
5
6 def subtract(a, b):
7     return a - b
8
9 def multiply(a, b):
10    return a * b
11
12 def divide(a, b):
13    if b == 0:
14        return "Error: Division by zero"
15    return a / b
16
17 if __name__ == "__main__":
18     a = float(input("Enter first number: "))
19     b = float(input("Enter second number: "))
20
21     print("Addition:", add(a, b))
22     print("Subtraction:", subtract(a, b))
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```

Task 4: Generate an Armstrong number program using Gemini, then improve it using Cursor AI.

Prompt: Write a Python program to check whether a given number is an Armstrong number. Use basic Python constructs and explain briefly.

## Code and Input:

The screenshot shows the Microsoft Visual Studio Code interface. The left sidebar displays extensions like 'All-in-one Python' and 'AI-Assisted Coding'. The main editor area contains Python code for checking if a number is an Armstrong number. The bottom terminal shows the code running and outputting 'Not an Armstrong Number' for the input '134'. A floating 'Build with Agent' panel is visible on the right, indicating AI assistance.

```
# An Armstrong number is a number that is equal to the sum of its own digits each raised to the power of the number of digits. For example, 153 is an Armstrong number because 1^3 + 5^3 + 3^3 = 153.
def is_armstrong(num):
    digits = str(num)
    power = len(digits)
    total = sum(int(digit) ** power for digit in digits)
    return total == num

if __name__ == "__main__":
    number = int(input("Enter a number: "))
    if is_armstrong(number):
        print("Armstrong Number")
    else:
        print("Not an Armstrong Number")
```

TERMINAL

```
PS C:\Users\path\Documents\AI-Assisted-Coding> PS C:\Users\path\Documents\AI-Assisted-Coding> PS C:\Users\path\Documents\AI-Assisted-Coding> cd 'C:\Users\path\Documents\AI-Assisted-Coding' & & 'C:\Users\path\appdata\local\Microsoft\Windows\Python\3.11\env\Scripts\pythonw.exe' -m 'c:\users\path\documents\ai-assisted-coding\134.py'
Not an Armstrong Number
PS C:\Users\path\Documents\AI-Assisted-Coding> PS C:\Users\path\Documents\AI-Assisted-Coding> PS C:\Users\path\Documents\AI-Assisted-Coding> PS C:\Users\path\Documents\AI-Assisted-Coding>
```