ASSIGNMENT

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Batch - 04

AI Assisted Coding

20-01-2026

Task Description-1

• Progressive Prompting for Calculator Design: Ask the AI to design a simple calculator

program by initially providing only the function name. Gradually enhance the prompt by

adding comments and usage examples.

Expected Output-1

• Comparison showing improvement in AI-generated calculator logic and structure.

Task Description-2

• Refining Prompts for Sorting Logic: Start with a vague prompt for sorting student marks,

then refine it to clearly specify sorting order and constraints.

assignment.py > ...

```python
# Task: Sort students by marks (Descending), then by Name (Ascending)
students = [
    {"name": "Varshith", "marks": 92},
    {"name": "sprusheeth", "marks": 85},
    {"name": "akshith", "marks": 92},
    {"name": "shushanth", "marks": 88}
]

# The refined prompt ensures the AI uses a tuple key for multi-level sorting
sorted_list = sorted(students, key=lambda x: (-x['marks'], x['name']))

print("Sorted Student List:")
for student in sorted_list:
    print(f" - {student['name']}: {student['marks']}")
```

Expected Output-2

• AI-generated sorting function evolves from ambiguous logic to an accurate and efficient

implementation.

Task Description-3

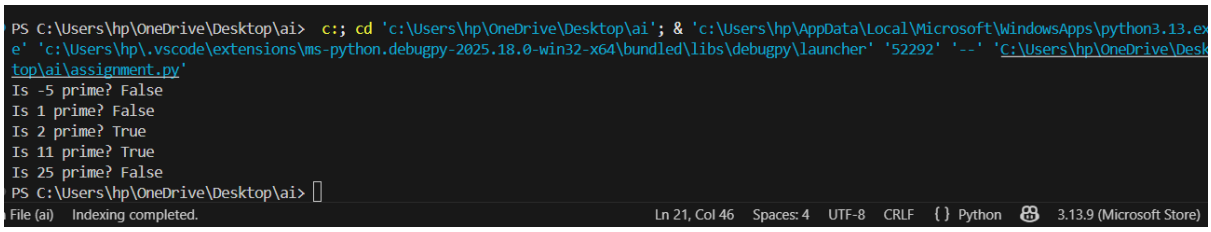
• Few-Shot Prompting for Prime Number Validation: Provide multiple input-output

examples for a function that checks whether a number is prime. Observe how few-shot

prompting improves correctness.

Expected Output-3

• Improved prime-checking function with better edge-case handling.

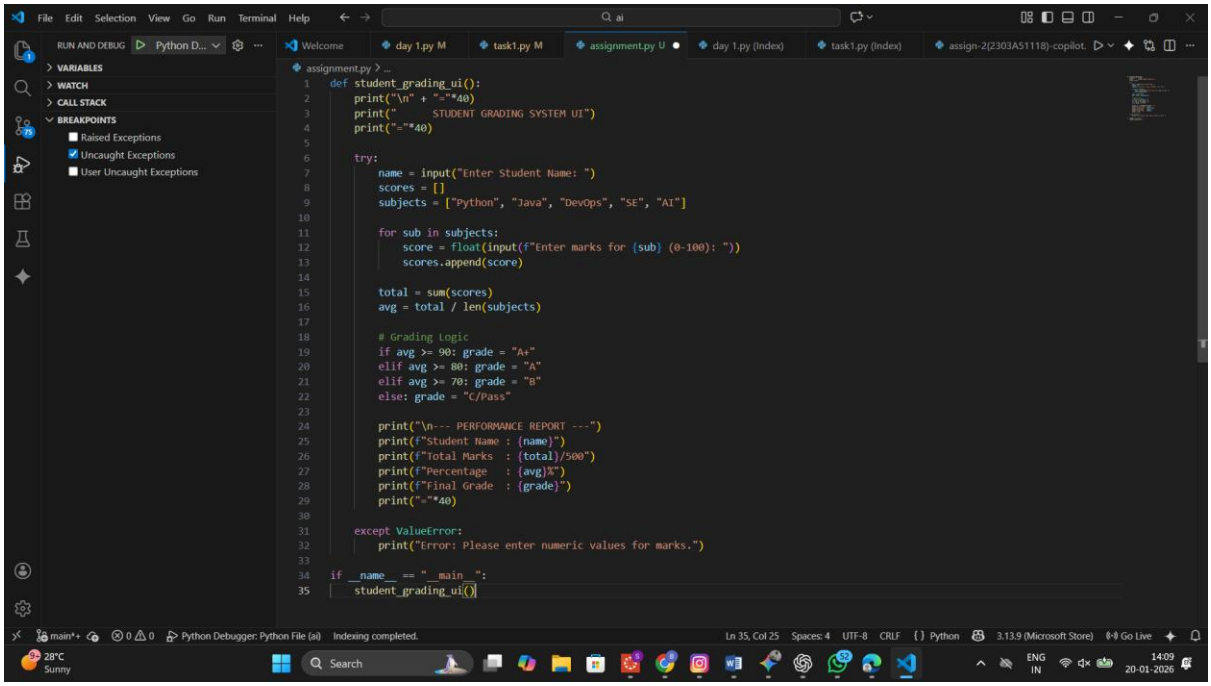


Task Description-4

• Prompt-Guided UI Design for Student Grading System: Create a user interface for a

student grading system that calculates total marks, percentage, and grade based on user

input.



Expected Output-4

• Well-structured UI code with accurate calculations and clear output display.

```
PS C:\Users\hp\OneDrive\Desktop\ai>  c:; cd 'c:\Users\hp\OneDrive\Desktop\ai'; & 'c:\Users\hp\AppData\Local\Microsoft\WindowsApps\python3.13.exe' 'c:\Users\hp\.vscode\extensions\ms-python.debugpy-2025.18.0-win32-x64\bundled\libs\debugpy\launcher' '56742' '--' 'C:\Users\hp\OneDrive\Desktop\ai\assignment.py'

--- PERFORMANCE REPORT ---
Student Name : sai varshith

--- PERFORMANCE REPORT ---
Student Name : sai varshith
--- PERFORMANCE REPORT ---
Student Name : sai varshith
Total Marks  : 424.0/500
Percentage   : 84.8%
Final Grade  : A
Total Marks  : 424.0/500
Percentage   : 84.8%
Final Grade  : A
Final Grade  : A
========================================
PS C:\Users\hp\OneDrive\Desktop\ai>
```

Task Description-5

• Analyzing Prompt Specificity in Unit Conversion Functions: Improving a Unit Conversion Function (Kilometers to Miles and Miles to Kilometers) Using Clear Instructions.

```python
def unit_converter(value, mode):
    """
    Mode 1: KM to Miles
    Mode 2: Miles to KM
    """
    KM_TO_MILE_FACTOR = 0.621371

    if mode == 1:
        result = value * KM_TO_MILE_FACTOR
        return f"{value} KM = {result:.4f} Miles"
    elif mode == 2:
        result = value / KM_TO_MILE_FACTOR
        return f"{value} Miles = {result:.4f} KM"
    else:
        return "Invalid Mode Selected"

print(unit_converter(10, 1)) # Precise Conversion
```

Expected Output-5

• Analysis of code quality and accuracy differences across multiple prompt variations.

```
PS C:\Users\hp\OneDrive\Desktop\ai>  c:; cd 'c:\Users\hp\OneDrive\Desktop\ai'; & 'c:\Users\hp\AppData\Local\Microsoft\WindowsApps\python3.13.e
e' 'c:\Users\hp\.vscode\extensions\ms-python.debugpy-2025.18.0-win32-x64\bundled\libs\debugpy\launcher' '63375' '--' 'C:\Users\hp\OneDrive\Des
top\ai\assignment.py'
10 KM = 6.2137 Miles
PS C:\Users\hp\OneDrive\Desktop\ai>
```