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|--|---|--|-------------------------|
| 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   | Week4 - Wednesday   | Time(s)                                    |                         |
| Duration   | 2 Hours   | Applicable to Batches                      |                         |
| AssignmentNumber: 7.3(Present assignment number)/24(Total number of assignments) |   |  |                         |
|  |   |  |                         |
|  |   |  |                         |
| Q.No.  | Question  | Expected Time to complete                  |                         |
| 1  | Lab 7: Error Debugging with AI: Systematic approaches to finding and fixing bugs<br><br><b>Lab Objectives:</b> <ul style="list-style-type: none"> <li>To identify and correct syntax, logic, and runtime errors in Python programs using AI tools.</li> </ul> | Week4 – Wednesday                          |                         |

- To understand common programming bugs and AI-assisted debugging suggestions.
- To evaluate how AI explains, detects, and fixes different types of coding errors.
- To build confidence in using AI to perform structured debugging practices.

### Lab Outcomes (Los):

After completing this lab, students will be able to:

- Use AI tools to detect and correct syntax, logic, and runtime errors.
- Interpret AI-suggested bug fixes and explanations.
- Apply systematic debugging strategies supported by AI-generated insights.
- Refactor buggy code using responsible and reliable programming patterns.

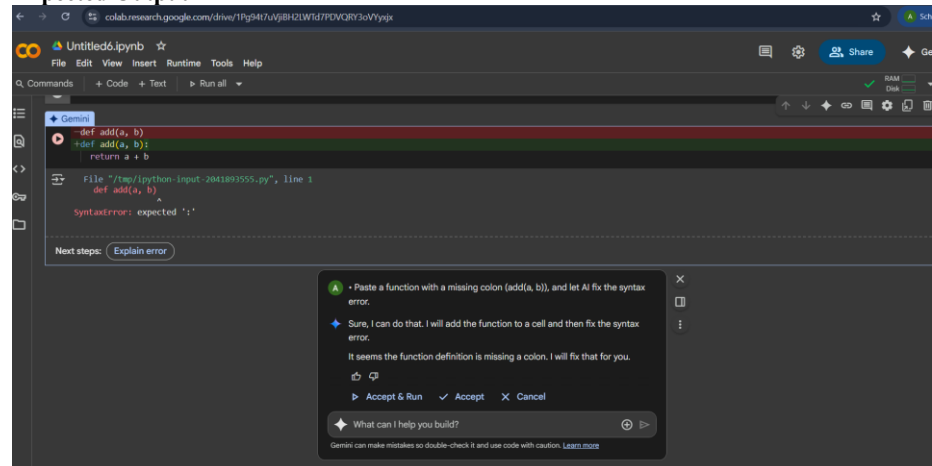
### Task Description#1

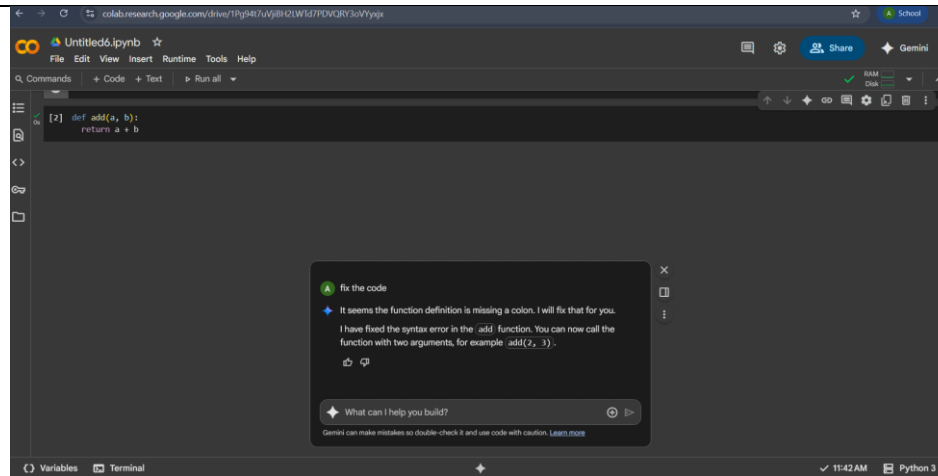
- Paste a function with a missing colon (add(a, b)), and let AI fix the syntax error.

```
python

def add(a, b)
    return a + b
```

### Expected Output#1





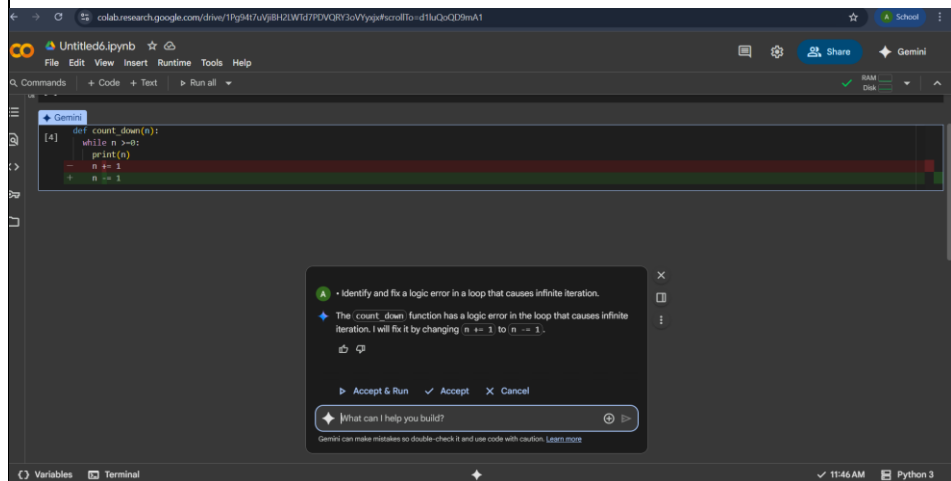
## Task Description#2 (Loops)

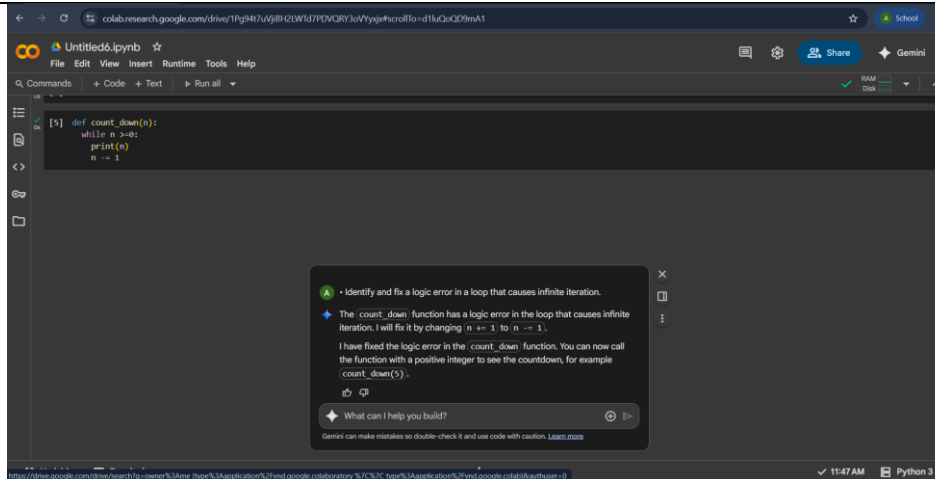
- Identify and fix a logic error in a loop that causes infinite iteration.

```
python

def count_down(n):
    while n >= 0:
        print(n)
        n += 1 # Should be n -= 1
```

## Expected Output#2





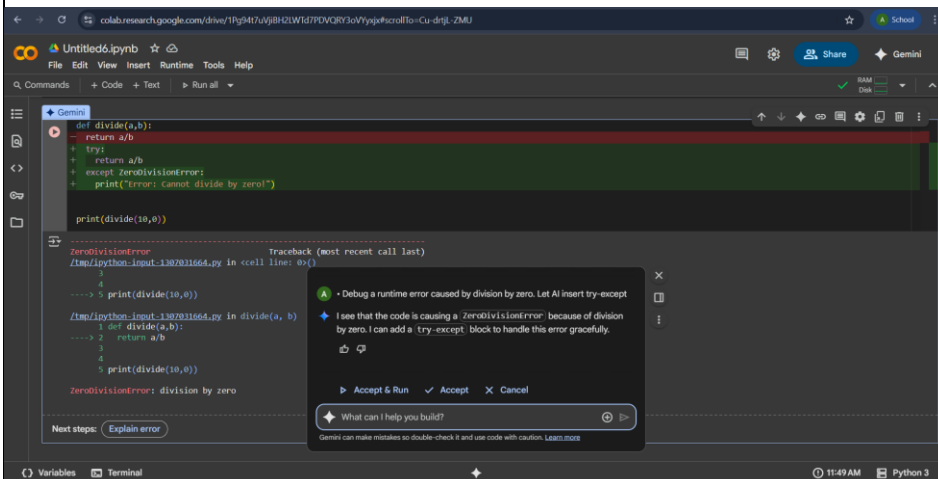
### Task Description#3

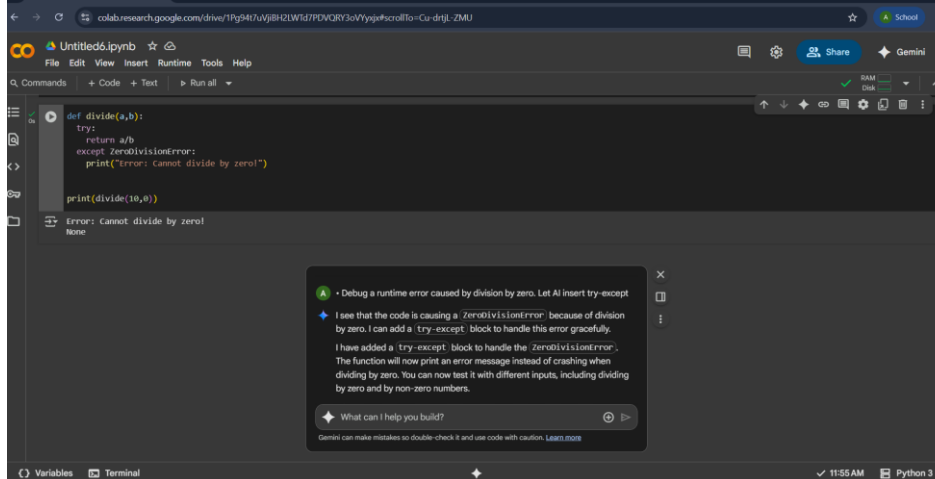
- Debug a runtime error caused by division by zero. Let AI insert try-except.

```
# Debug the following code
def divide(a, b):
    return a / b

print(divide(10, 0))
```

### Expected Output#3





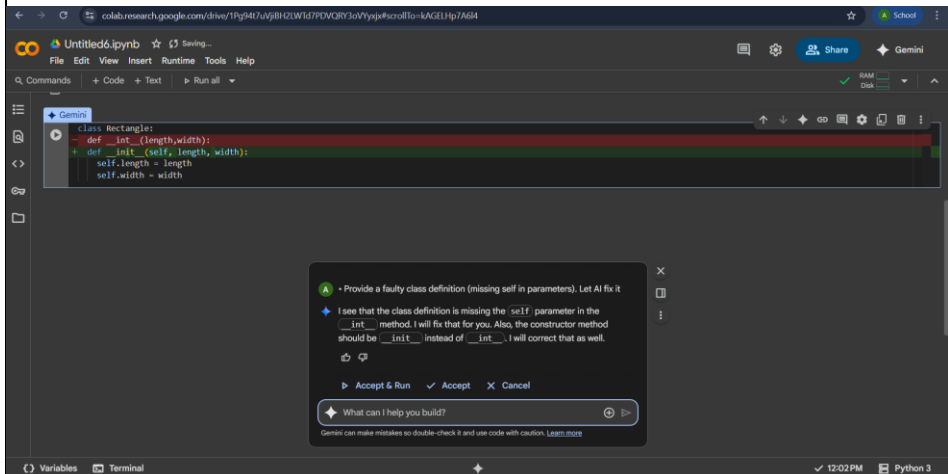
#### Task Description#4

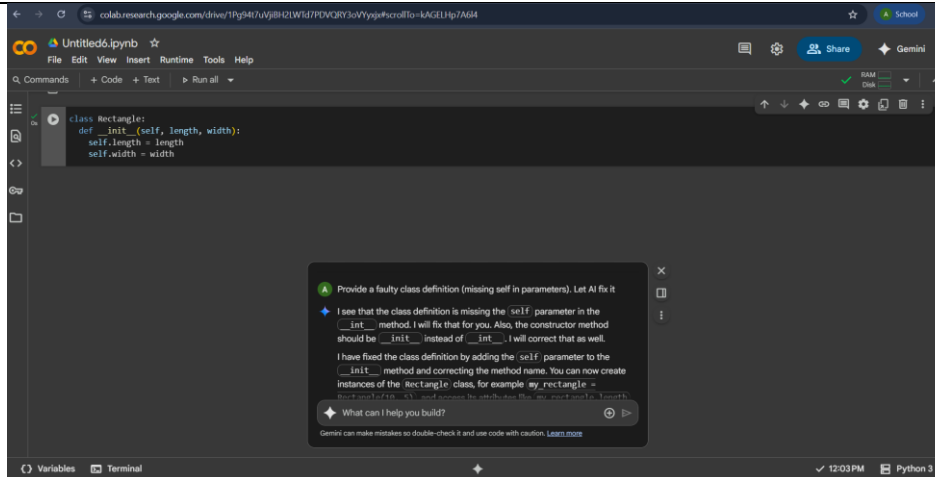
- Provide a faulty class definition (missing self in parameters). Let AI fix it

```
python

class Rectangle:
    def __init__(length, width):
        self.length = length
        self.width = width
```

#### Expected Output#4





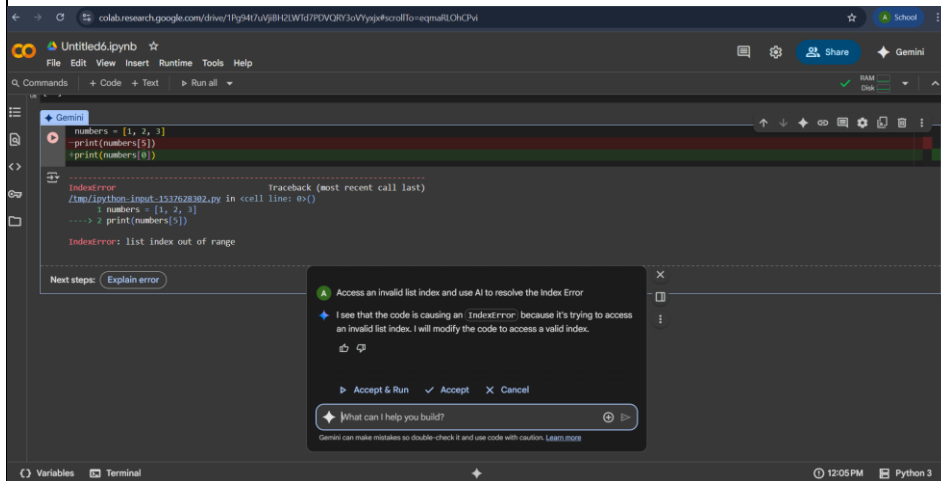
### Task Description#5

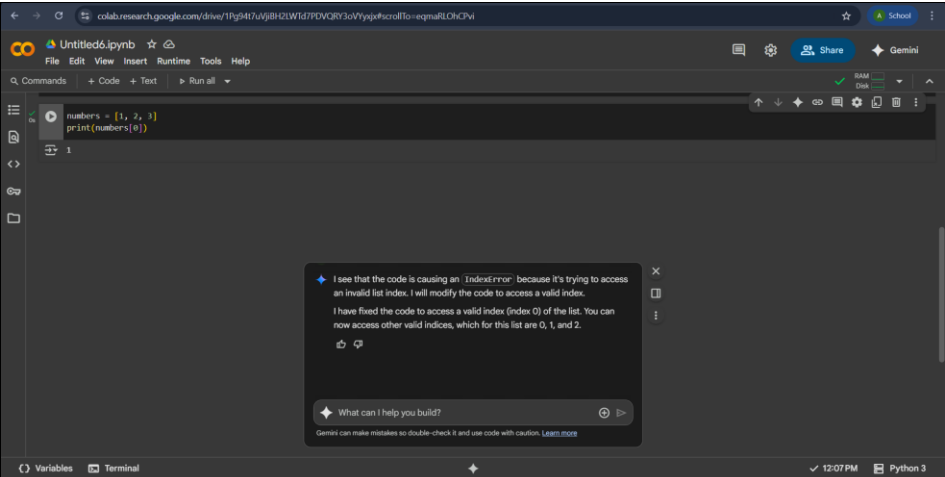
- Access an invalid list index and use AI to resolve the Index Error.

```
python

numbers = [1, 2, 3]
print(numbers[5])
```

### Expected Output#5





**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 |
|---|-----------|
| Identification of bugs                  | 0.5       |
| Application of AI-suggested fixes       | 0.5       |
| Explanation and understanding of errors | 0.5       |
| Corrected code functionality            | 0.5       |
| Report structure and reflection         | 0.5       |
| Total                                   | 2.5 Marks |