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	**Applicableto Batches**	
AssignmentNumber: **7.3**(Present assignment number)/**24**(Total number of assignments)			

Q.No.	Question	*ExpectedTime to complete*
1	Lab 6: AI-Based Code Completion – Classes, Loops, and Conditionals **Lab Objectives:** • To identify and correct syntax, logic, and runtime errors in Python programs using AI tools. • To understand common programming bugs and AI-assisted debugging suggestions.	Week4 - Wednesday

- 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.

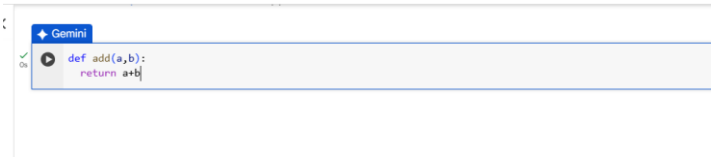
Task Description#1

- 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

- Corrected function with syntax fix



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
```

```
def count_down(n):
  while n>=0:
    print(n)
    n+=1
count_down(10)
```

```
8793886
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8793906
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8793909
8793910
8793911
8793912
8793913
```

Expected Output#2

- AI fixes increment/decrement error

```
def count_down(n):
  while n>=0:
    print(n)
    n-=1
count_down(10)
```

```
10
9
8
7
6
5
4
3
2
1
0
```

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))
```

```
Run all   Cannot save changes

def divide (a,b):
  return a/b
print(divide(10,0))

---------------------------------------------------------------------------
ZeroDivisionError                         Traceback (most recent call last)
/tmp/ipython-input-3932693227.py in <cell line: 0>()
      1 def divide (a,b):
      2   return a/b
----> 3 print(divide(10,0))

/tmp/ipython-input-3932693227.py in divide(a, b)
      1 def divide (a,b):
----> 2   return a/b
      3 print(divide(10,0))

ZeroDivisionError: division by zero
```

Expected Output#3

- Corrected function with safe error handling

```
def divide (a,b):
  if b == 0:
    return "Error: Cannot divide by zero"
  return a/b
print(divide(10,0))
print(divide(10,5))
```

```
Error: Cannot divide by zero
2.0
```

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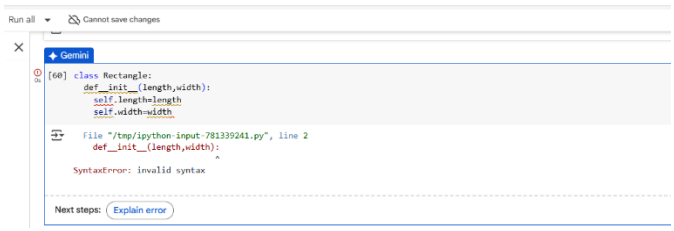
Task Description#4

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

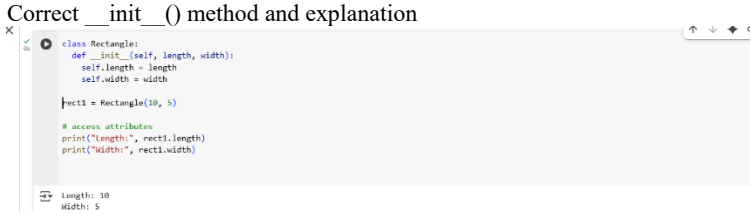
```
python

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



Expected Output#4

- Correct __init__() method and explanation

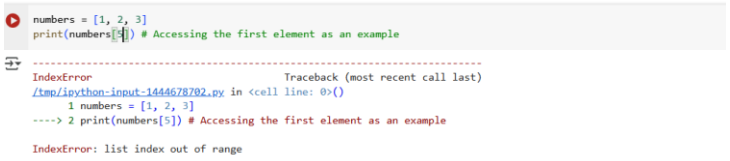


Task Description#5

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

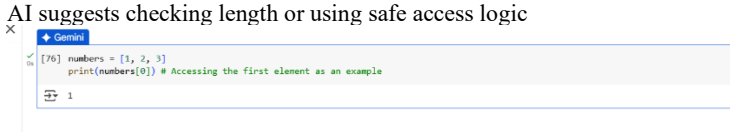
```
python

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



Expected Output#5

- AI suggests checking length or using safe access logic



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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**