ASSIGNMENT-4

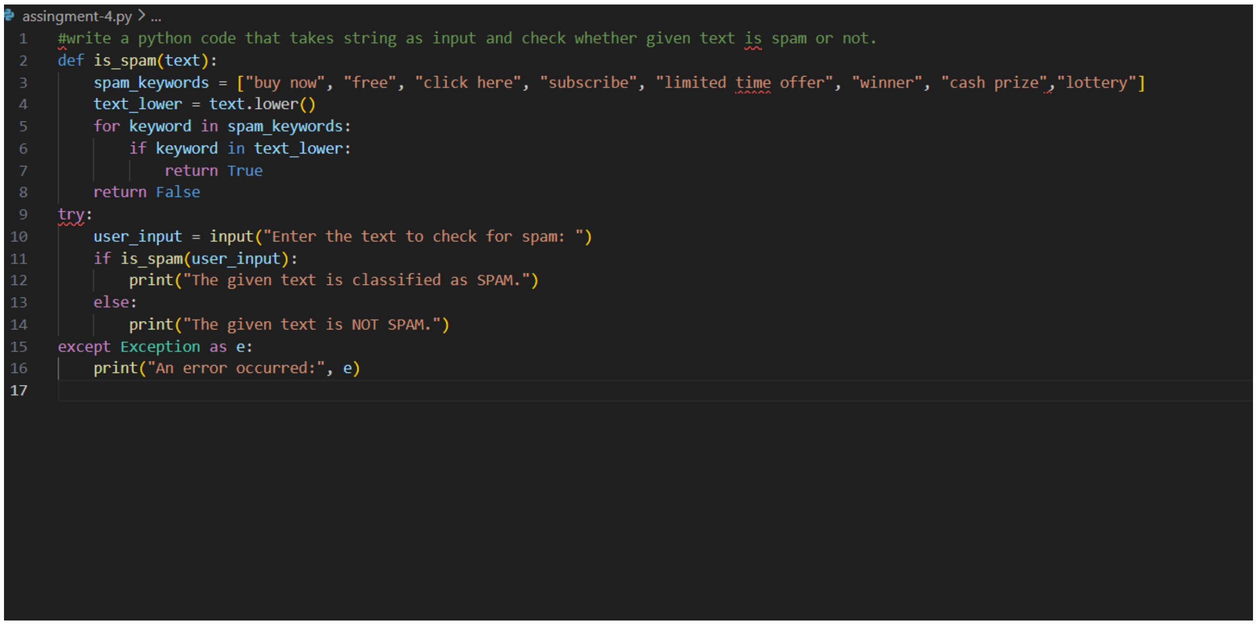
U.VIGNESH

23O3A51964

BATCH-24

Q1. Zero-Shot Prompting (Basic Lab Task) Task:
Write a Python function that classifies a given text as Spam or Not
Spam using zero-shot prompting.
Steps:
1. Construct a prompt without any examples.
2. Clearly specify the output labels.
3. Display only the predicted label.
Input:
"Congratulations! You have won a free lottery ticket." Expected
Output:
Spam

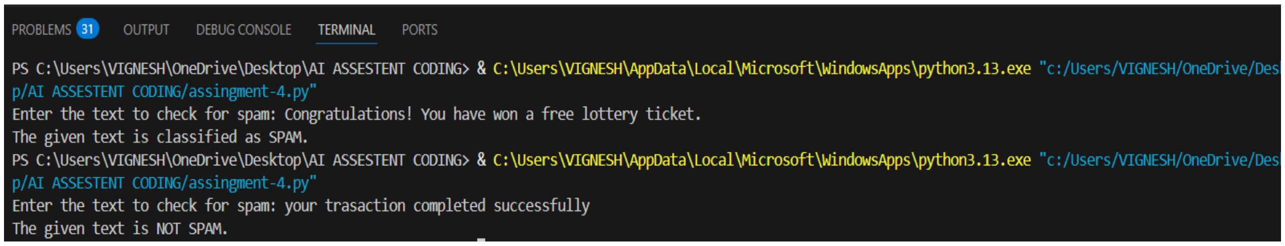
INPUT:



assignment-4.py > ...

```python
#write a python code that takes string as input and check whether given text is spam or not.
def is_spam(text):
    spam_keywords = ["buy now", "free", "click here", "subscribe", "limited time offer", "winner", "cash prize","lottery"]
    text_lower = text.lower()
    for keyword in spam_keywords:
        if keyword in text_lower:
            return True
    return False
try:
    user_input = input("Enter the text to check for spam: ")
    if is_spam(user_input):
        print("The given text is classified as SPAM.")
    else:
        print("The given text is NOT SPAM.")
except Exception as e:
    print("An error occurred:", e)
```

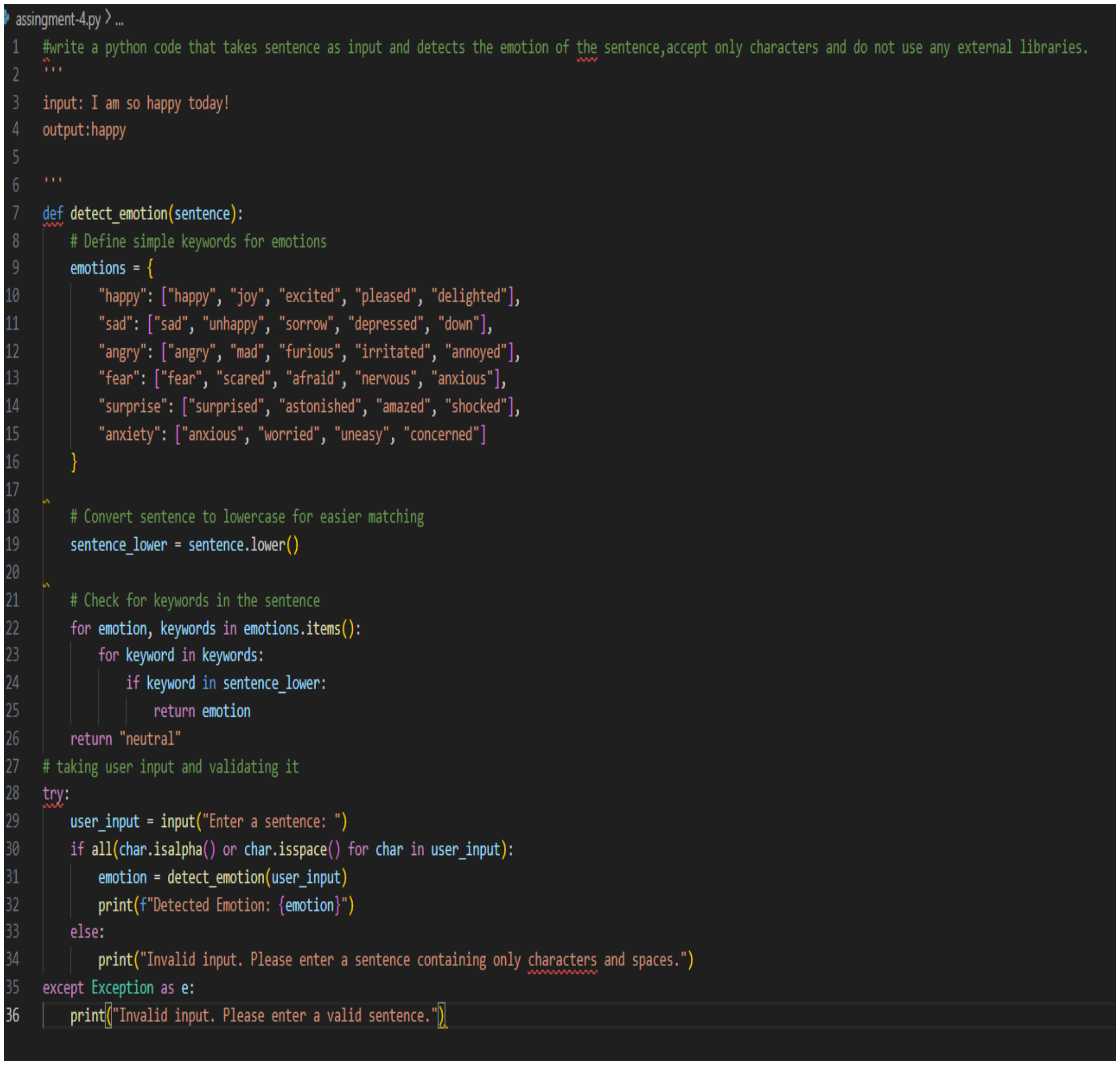
OUTPUT:



```
PS C:\Users\VIGNESH\OneDrive\Desktop\AI ASSESTENT CODING> & C:\Users\VIGNESH\AppData\Local\Microsoft\WindowsApps\python3.13.exe "c:/Users/VIGNESH/OneDrive/Des
p/AI ASSESTENT CODING/assingment-4.py"
Enter the text to check for spam: Congratulations! You have won a free lottery ticket.
The given text is classified as SPAM.
PS C:\Users\VIGNESH\OneDrive\Desktop\AI ASSESTENT CODING> & C:\Users\VIGNESH\AppData\Local\Microsoft\WindowsApps\python3.13.exe "c:/Users/VIGNESH/OneDrive/Des
p/AI ASSESTENT CODING/assingment-4.py"
Enter the text to check for spam: your trasaction completed successfully
The given text is NOT SPAM.
```

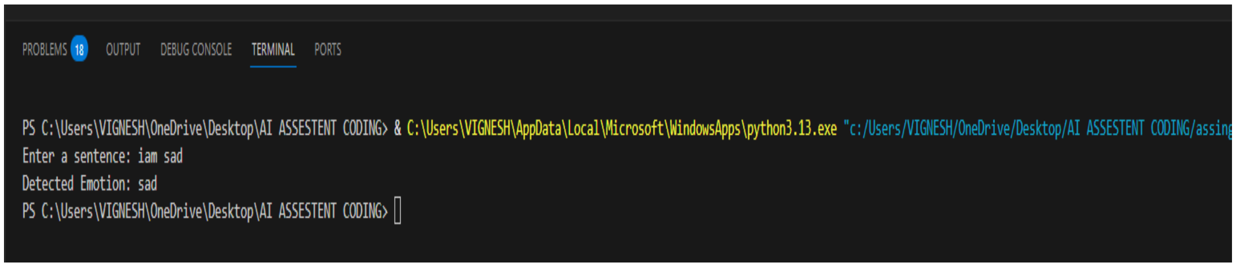
Q2. One-Shot Prompting (Emotion detection) Task:
Write a Python program that detects the emotion of a sentence using one-shot prompting.
Emotions: [‘happy', 'sad', 'angry', 'excited', 'nervous', ’neutral’] Steps:
1. Provide one labeled example inside the prompt.
2. Take a sentence as input.
3. Print the predicted emotion

INPUT:



```python
assingment-4.py > ...
#write a python code that takes sentence as input and detects the emotion of the sentence,accept only characters and do not use any external libraries.
'''

input: I am so happy today!
output:happy

'''
def detect_emotion(sentence):
    # Define simple keywords for emotions
    emotions = {
        "happy": ["happy", "joy", "excited", "pleased", "delighted"],
        "sad": ["sad", "unhappy", "sorrow", "depressed", "down"],
        "angry": ["angry", "mad", "furious", "irritated", "annoyed"],
        "fear": ["fear", "scared", "afraid", "nervous", "anxious"],
        "surprise": ["surprised", "astonished", "amazed", "shocked"],
        "anxiety": ["anxious", "worried", "uneasy", "concerned"]
    }

    # Convert sentence to lowercase for easier matching
    sentence_lower = sentence.lower()

    # Check for keywords in the sentence
    for emotion, keywords in emotions.items():
        for keyword in keywords:
            if keyword in sentence_lower:
                return emotion
    return "neutral"
# taking user input and validating it
try:
    user_input = input("Enter a sentence: ")
    if all(char.isalpha() or char.isspace() for char in user_input):
        emotion = detect_emotion(user_input)
        print(f"Detected Emotion: {emotion}")
    else:
        print("Invalid input. Please enter a sentence containing only characters and spaces.")
except Exception as e:
    print("Invalid input. Please enter a valid sentence.")
```

OUTPUT:

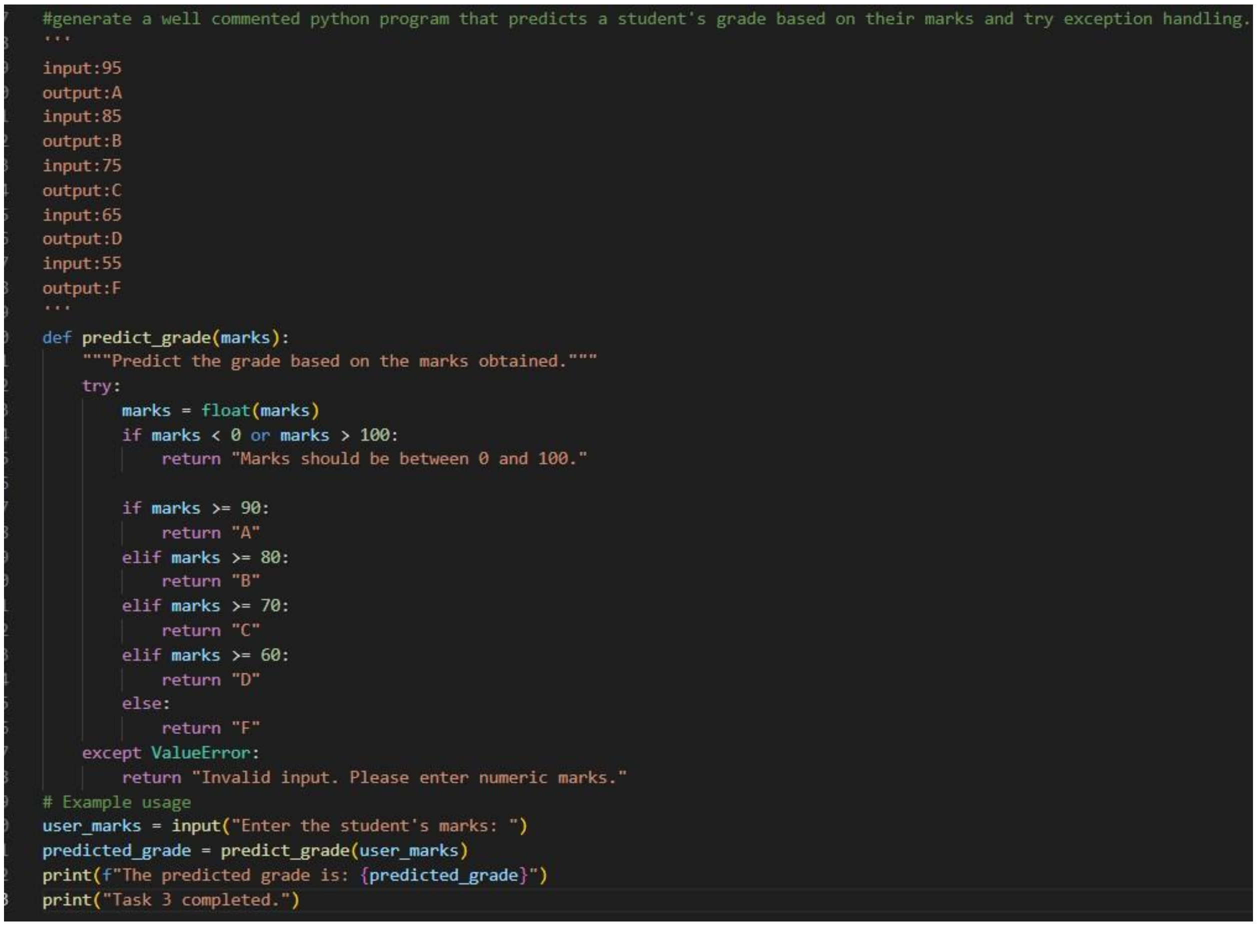


```
PS C:\Users\VIGNESH\OneDrive\Desktop\AI ASSESTENT CODING> & C:\Users\VIGNESH\AppData\Local\Microsoft\WindowsApps\python3.13.exe "c:/Users/VIGNESH/OneDrive/Desktop/AI ASSESTENT CODING/assing
Enter a sentence: iam sad
Detected Emotion: sad
PS C:\Users\VIGNESH\OneDrive\Desktop\AI ASSESTENT CODING> 
```

Q3. Few-Shot Prompting (Student Grading Based on Marks) Task: Write a Python program that predicts a student’s grade based on marks using few-shot prompting.

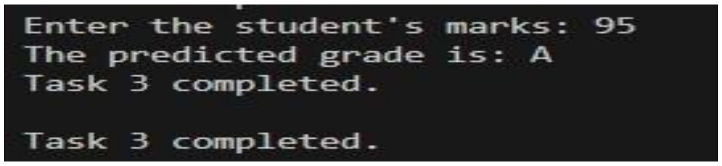
Grades:
['A', 'B', 'C', 'D', 'F']
Grading Criteria (to be inferred from examples):
• 90–100 → A
• 80–89 → B
• 70–79 → C
• 60–69 → D
• Below 60 → F

INPUT:



```python
#generate a well commented python program that predicts a student's grade based on their marks and try exception handling.
'''
input:95
output:A
input:85
output:B
input:75
output:C
input:65
output:D
input:55
output:F
'''
def predict_grade(marks):
    """Predict the grade based on the marks obtained."""
    try:
        marks = float(marks)
        if marks < 0 or marks > 100:
            return "Marks should be between 0 and 100."

        if marks >= 90:
            return "A"
        elif marks >= 80:
            return "B"
        elif marks >= 70:
            return "C"
        elif marks >= 60:
            return "D"
        else:
            return "F"
    except ValueError:
        return "Invalid input. Please enter numeric marks."
# Example usage
user_marks = input("Enter the student's marks: ")
predicted_grade = predict_grade(user_marks)
print(f"The predicted grade is: {predicted_grade}")
print("Task 3 completed.")
```

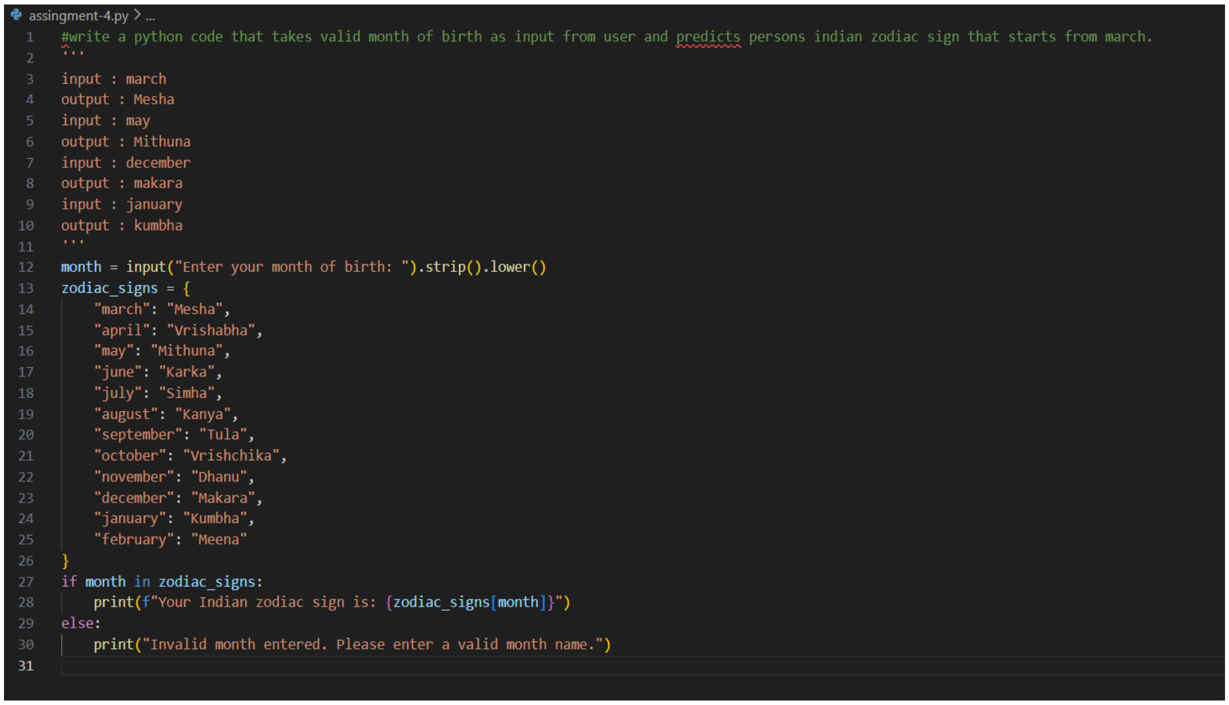
OUTPUT:



```
Enter the student's marks: 95
The predicted grade is: A
Task 3 completed.

Task 3 completed.
```

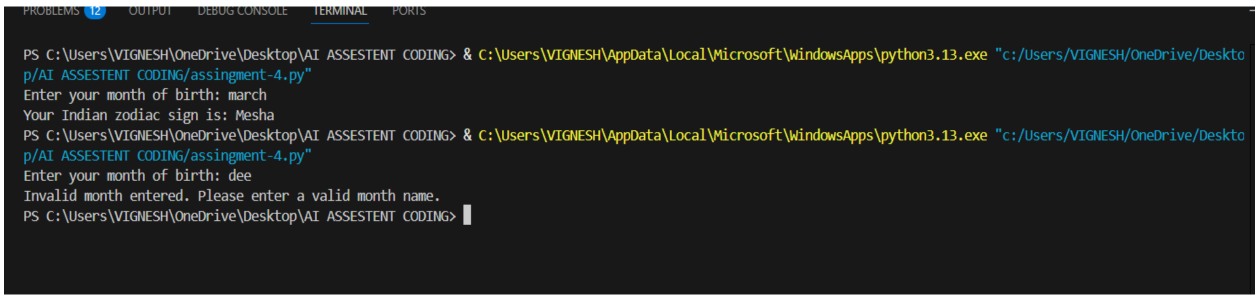
Q4. Multi-Shot Prompting (Indian Zodiac Sign Prediction using Month Name)
Task:
Write a Python program that predicts a person’s Indian Zodiac sign (Rashi) based on the month of birth (month name) using multi-shot prompting.
Indian Zodiac Order (Simplified Month-Based Model): The Indian Zodiac cycle starts in March with Mesha and follows this order:
March → Mesha
April → Vrishabha
May → Mithuna
June → Karka
July → Simha
August → Kanya
September → Tula
October → Vrischika
November → Dhanu
December → Makara
January → Kumbha February
→ Meena

INPUT:



```
assingment-4.py > ...
#write a python code that takes valid month of birth as input from user and predicts persons indian zodiac sign that starts from march.
'''
input : march
output : Mesha
input : may
output : Mithuna
input : december
output : makara
input : january
output : kumbha
'''
month = input("Enter your month of birth: ").strip().lower()
zodiac_signs = {
    "march": "Mesha",
    "april": "Vrishabha",
    "may": "Mithuna",
    "june": "Karka",
    "july": "Simha",
    "august": "Kanya",
    "september": "Tula",
    "october": "Vrishchika",
    "november": "Dhanu",
    "december": "Makara",
    "january": "Kumbha",
    "february": "Meena"
}
if month in zodiac_signs:
    print(f"Your Indian zodiac sign is: {zodiac_signs[month]}")
else:
    print("Invalid month entered. Please enter a valid month name.")
```

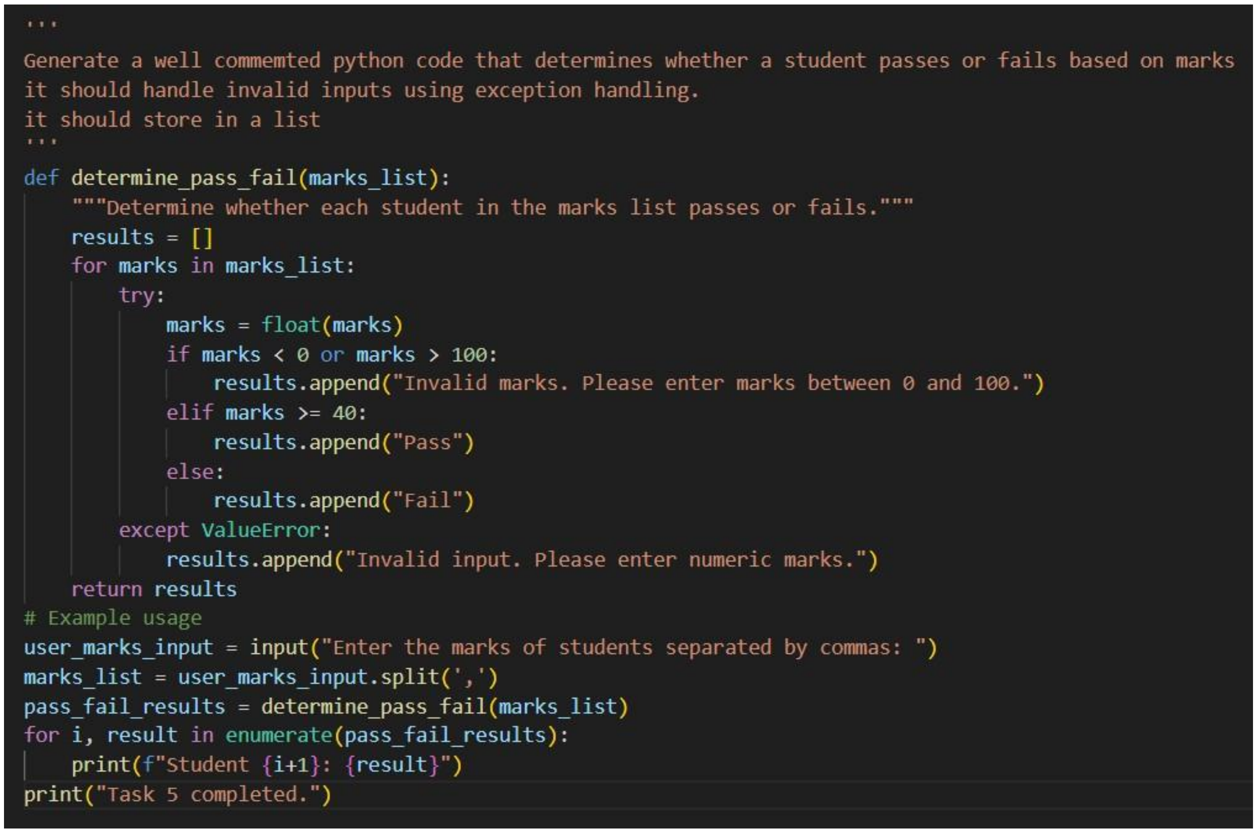
OUTPUT:



PROBLEMS 12 OUTPUT DEBUG CONSOLE TERMINAL PORTS

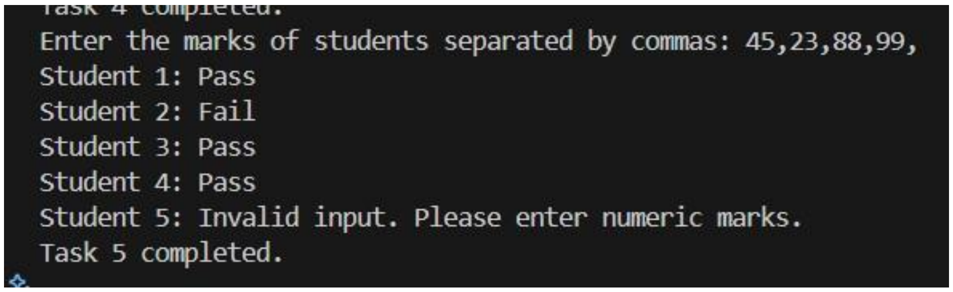
```
PS C:\Users\VIGNESH\OneDrive\Desktop\AI ASSESTENT CODING> & C:\Users\VIGNESH\AppData\Local\Microsoft\WindowsApps\python3.13.exe "c:/Users/VIGNESH/OneDrive/Deskto
p/AI ASSESTENT CODING/assingment-4.py"
Enter your month of birth: march
Your Indian zodiac sign is: Mesha
PS C:\Users\VIGNESH\OneDrive\Desktop\AI ASSESTENT CODING> & C:\Users\VIGNESH\AppData\Local\Microsoft\WindowsApps\python3.13.exe "c:/Users/VIGNESH/OneDrive/Deskto
p/AI ASSESTENT CODING/assingment-4.py"
Enter your month of birth: dee
Invalid month entered. Please enter a valid month name.
PS C:\Users\VIGNESH\OneDrive\Desktop\AI ASSESTENT CODING>
```

Q5. Result Analysis Based on Marks
Task: Write a Python program that determines whether a student Passes or Fails based on marks using Chain-of-Thought (CoT) prompting. Result Categories:
['Pass', 'Fail']
INPUT:



```python
'''
Generate a well commemted python code that determines whether a student passes or fails based on marks
it should handle invalid inputs using exception handling.
it should store in a list
'''
def determine_pass_fail(marks_list):
    """Determine whether each student in the marks list passes or fails."""
    results = []
    for marks in marks_list:
        try:
            marks = float(marks)
            if marks < 0 or marks > 100:
                results.append("Invalid marks. Please enter marks between 0 and 100.")
            elif marks >= 40:
                results.append("Pass")
            else:
                results.append("Fail")
        except ValueError:
            results.append("Invalid input. Please enter numeric marks.")
    return results
# Example usage
user_marks_input = input("Enter the marks of students separated by commas: ")
marks_list = user_marks_input.split(',')
pass_fail_results = determine_pass_fail(marks_list)
for i, result in enumerate(pass_fail_results):
    print(f"Student {i+1}: {result}")
print("Task 5 completed.")
```

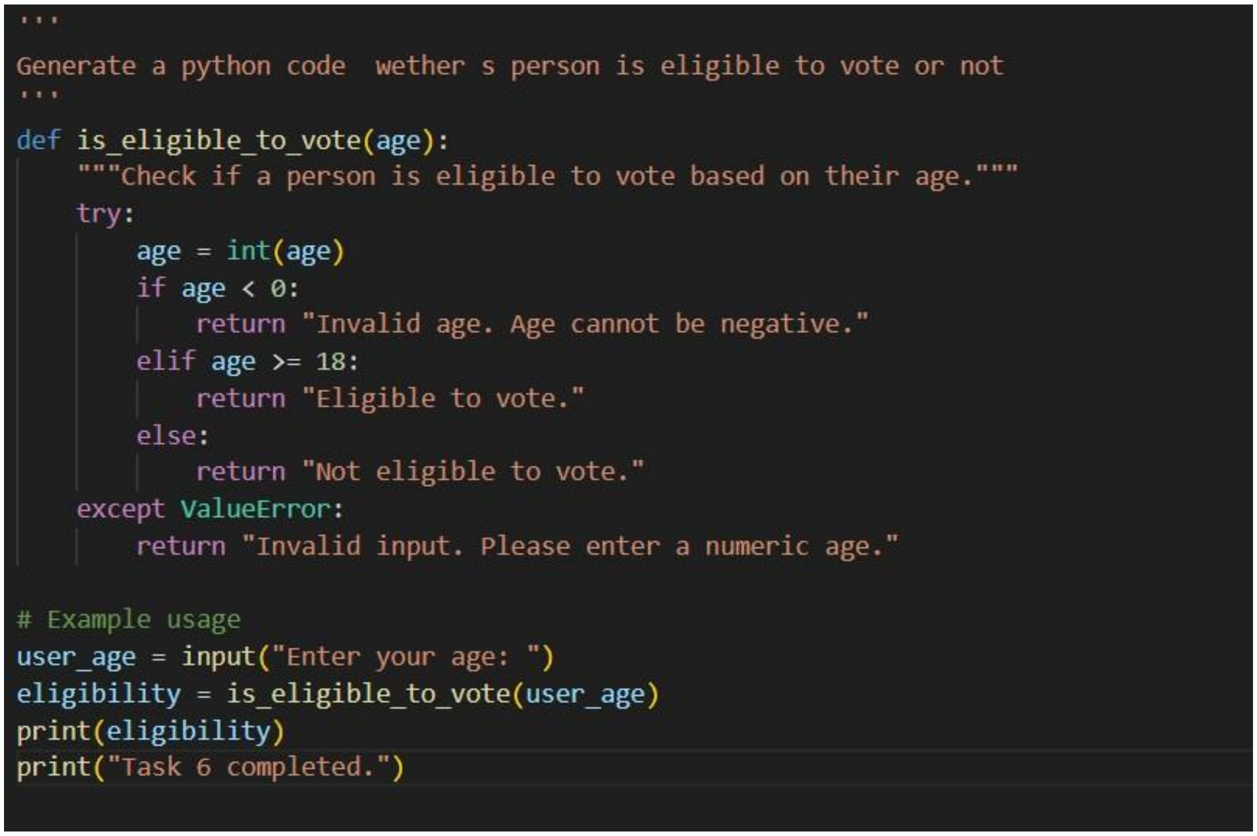
OUTPUT:



```
Task 4 completed.
Enter the marks of students separated by commas: 45,23,88,99,
Student 1: Pass
Student 2: Fail
Student 3: Pass
Student 4: Pass
Student 5: Invalid input. Please enter numeric marks.
Task 5 completed.
```

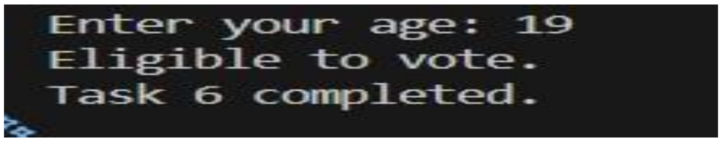
Q6 Voting Eligibility Check (Chain-of-Thought Prompting)
Task: Write a Python program that determines whether a person is eligible to vote using Chain-of-Thought (CoT) prompting.

INPUT:



```python
'''
Generate a python code  wether s person is eligible to vote or not
'''
def is_eligible_to_vote(age):
    """Check if a person is eligible to vote based on their age."""
    try:
        age = int(age)
        if age < 0:
            return "Invalid age. Age cannot be negative."
        elif age >= 18:
            return "Eligible to vote."
        else:
            return "Not eligible to vote."
    except ValueError:
        return "Invalid input. Please enter a numeric age."

# Example usage
user_age = input("Enter your age: ")
eligibility = is_eligible_to_vote(user_age)
print(eligibility)
print("Task 6 completed.")
```

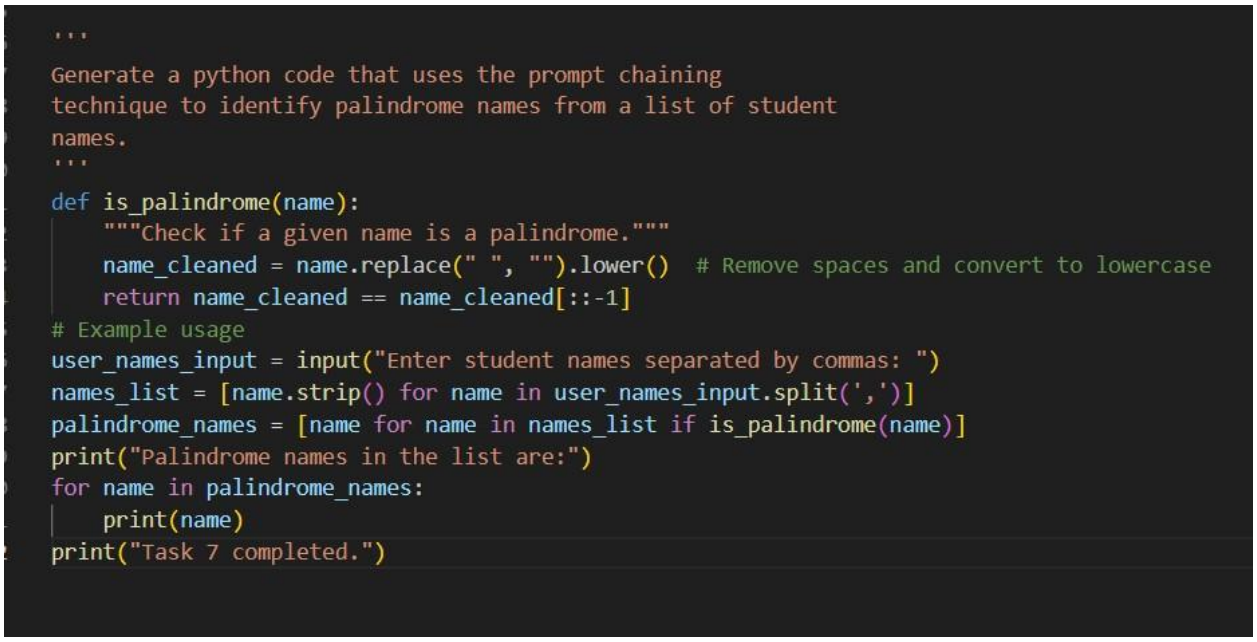
OUTPUT:



```
Enter your age: 19
Eligible to vote.
Task 6 completed.
```

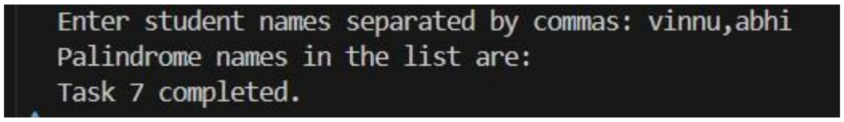
Q7 Prompt Chaining (String Processing – Palindrome Names) Task:
Write a Python program that uses the prompt chaining technique to identify palindrome names from a list of student names.

INPUT:



```python
'''
Generate a python code that uses the prompt chaining
technique to identify palindrome names from a list of student
names.
'''
def is_palindrome(name):
    """Check if a given name is a palindrome."""
    name_cleaned = name.replace(" ", "").lower()  # Remove spaces and convert to lowercase
    return name_cleaned == name_cleaned[::-1]
# Example usage
user_names_input = input("Enter student names separated by commas: ")
names_list = [name.strip() for name in user_names_input.split(',')]
palindrome_names = [name for name in names_list if is_palindrome(name)]
print("Palindrome names in the list are:")
for name in palindrome_names:
    print(name)
print("Task 7 completed.")
```

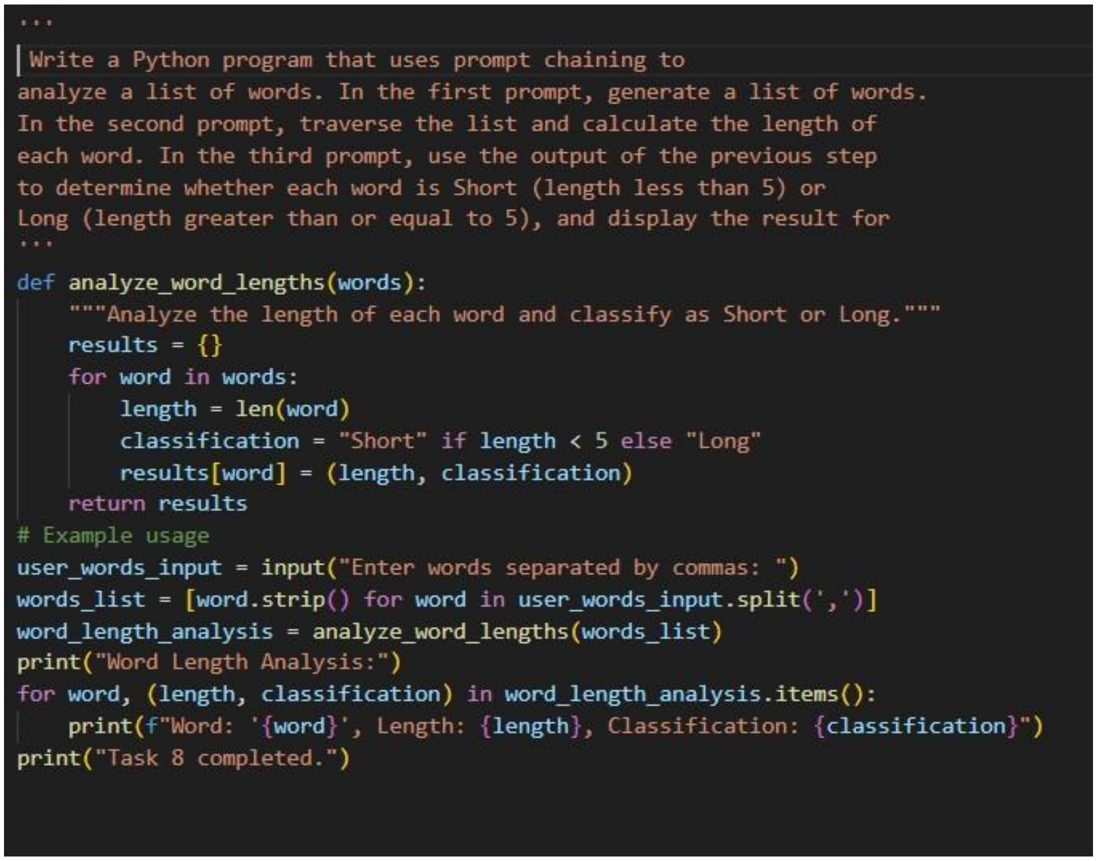
OUTPUT:



```
Enter student names separated by commas: vinnu,abhi
Palindrome names in the list are:
Task 7 completed.
```

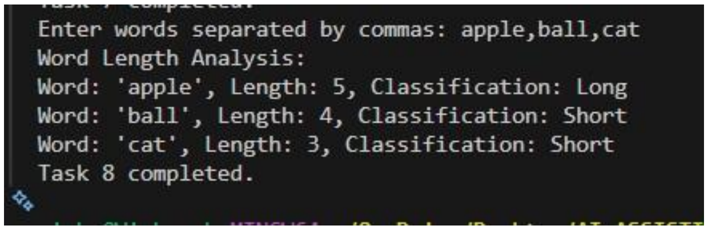
Q8 Prompt Chaining (String Processing – Word Length
Analysis)
Task: Write a Python program that uses prompt chaining to analyze a list of words. In the first prompt, generate a list of words. In the second prompt, traverse the list and calculate the length of each word. In the third prompt, use the output of the previous step to determine whether each word is Short (length less than 5) or Long (length greater than or equal to 5), and display the result for
Each word

INPUT:



```python
'''
Write a Python program that uses prompt chaining to
analyze a list of words. In the first prompt, generate a list of words.
In the second prompt, traverse the list and calculate the length of
each word. In the third prompt, use the output of the previous step
to determine whether each word is Short (length less than 5) or
Long (length greater than or equal to 5), and display the result for
'''
def analyze_word_lengths(words):
    """Analyze the length of each word and classify as Short or Long."""
    results = {}
    for word in words:
        length = len(word)
        classification = "Short" if length < 5 else "Long"
        results[word] = (length, classification)
    return results
# Example usage
user_words_input = input("Enter words separated by commas: ")
words_list = [word.strip() for word in user_words_input.split(',')]
word_length_analysis = analyze_word_lengths(words_list)
print("Word Length Analysis:")
for word, (length, classification) in word_length_analysis.items():
    print(f"Word: '{word}', Length: {length}, Classification: {classification}")
print("Task 8 completed.")
```

OUTPUT:



```
Enter words separated by commas: apple,ball,cat
Word Length Analysis:
Word: 'apple', Length: 5, Classification: Long
Word: 'ball', Length: 4, Classification: Short
Word: 'cat', Length: 3, Classification: Short
Task 8 completed.
```