Assignment-4

HT-NO: 2303A51965

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.

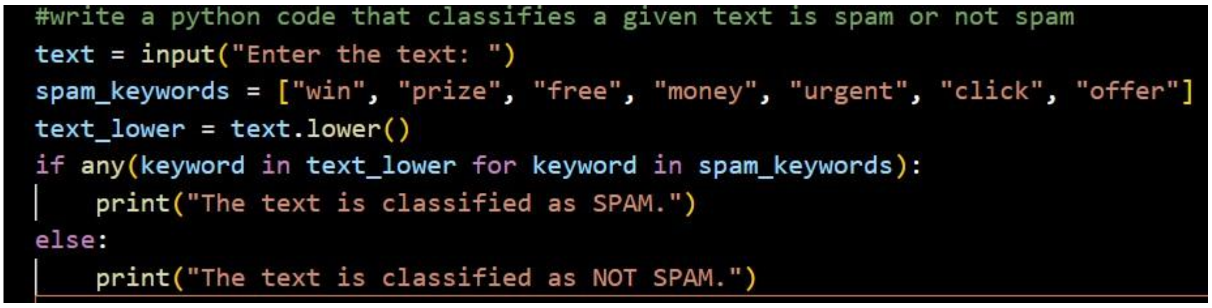
3. Display only the predicted label.

Input:

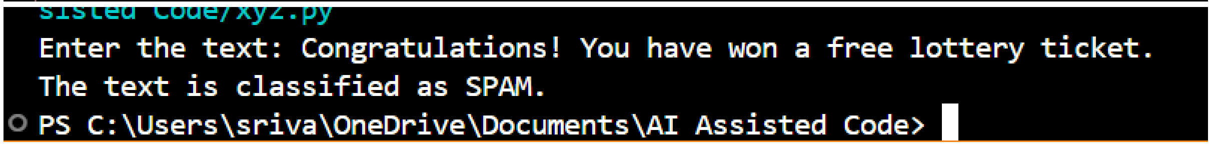
"Congratulations! You have won a free lottery ticket."

Expected Output:

Spam



```python
#write a python code that classifies a given text is spam or not spam
text = input("Enter the text: ")
spam_keywords = ["win", "prize", "free", "money", "urgent", "click", "offer"]
text_lower = text.lower()
if any(keyword in text_lower for keyword in spam_keywords):
    print("The text is classified as SPAM.")
else:
    print("The text is classified as NOT SPAM.")
```



```
sisted Code/xyz.py
Enter the text: Congratulations! You have won a free lottery ticket.
The text is classified as SPAM.
PS C:\Users\sriva\OneDrive\Documents\AI Assisted Code>
```

Q2. One-Shot Prompting (Emotion detection)

Task:

Write a Python program that detects the emotion of a sentence

using one-shot prompting.

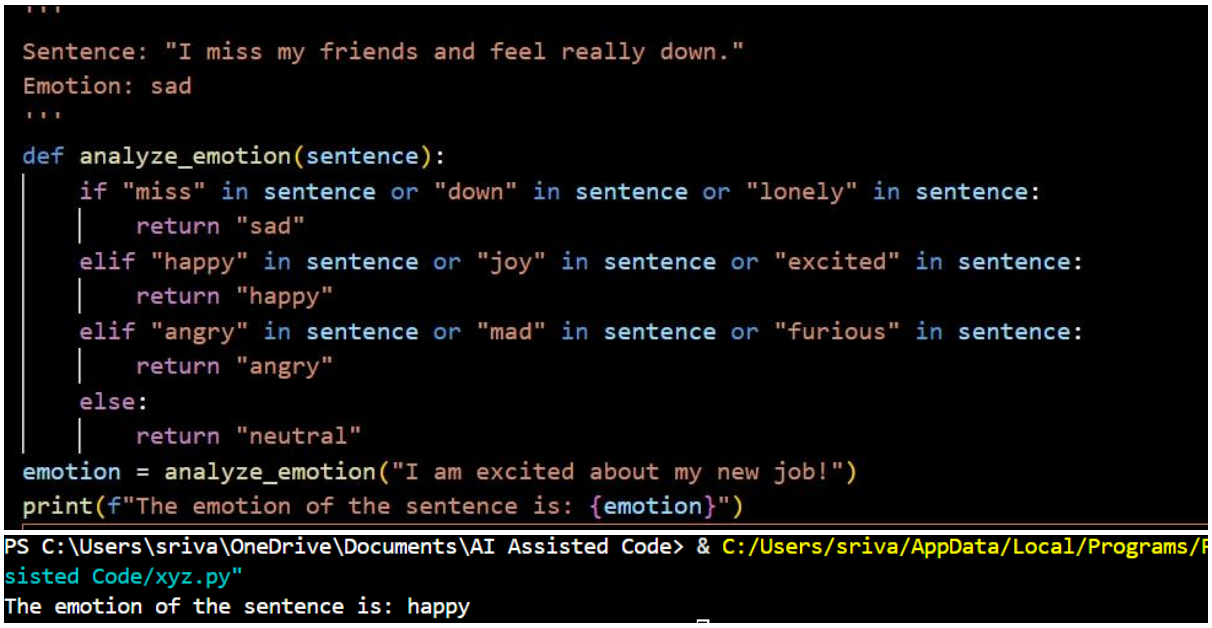
Emotions: [‘happy', 'sad', 'angry', 'excited', 'nervous', ’neutral’]

Steps:

1. Provide one labelled example inside the prompt.

2. Take a sentence as input.

3. Print the predicted emotion



```
'''
Sentence: "I miss my friends and feel really down."
Emotion: sad
'''
def analyze_emotion(sentence):
    if "miss" in sentence or "down" in sentence or "lonely" in sentence:
        return "sad"
    elif "happy" in sentence or "joy" in sentence or "excited" in sentence:
        return "happy"
    elif "angry" in sentence or "mad" in sentence or "furious" in sentence:
        return "angry"
    else:
        return "neutral"
emotion = analyze_emotion("I am excited about my new job!")
print(f"The emotion of the sentence is: {emotion}")
```

```
PS C:\Users\sriva\OneDrive\Documents\AI Assisted Code> & C:/Users/sriva/AppData/Local/Programs/P
sisted Code/xyz.py"
The emotion of the sentence is: happy
```

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):

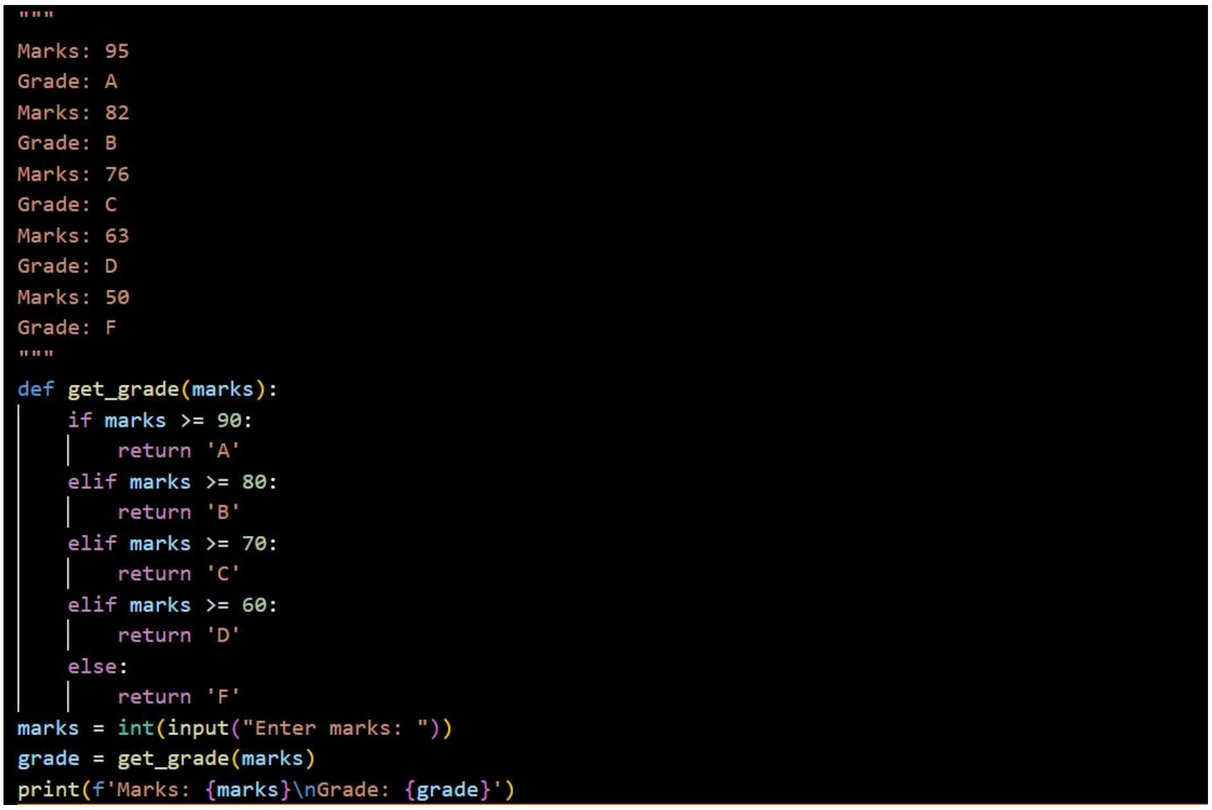
• 90–100 → A

• 80–89 → B

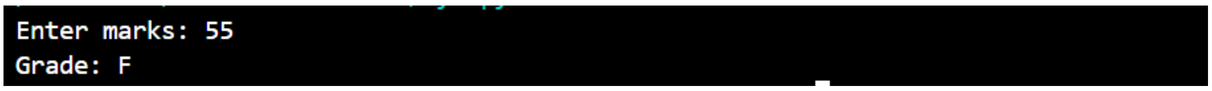
• 70–79 → C

• 60–69 → D

• Below 60 → F



```python
"""
Marks: 95
Grade: A
Marks: 82
Grade: B
Marks: 76
Grade: C
Marks: 63
Grade: D
Marks: 50
Grade: F
"""
def get_grade(marks):
    if marks >= 90:
        return 'A'
    elif marks >= 80:
        return 'B'
    elif marks >= 70:
        return 'C'
    elif marks >= 60:
        return 'D'
    else:
        return 'F'
marks = int(input("Enter marks: "))
grade = get_grade(marks)
print(f'Marks: {marks}\nGrade: {grade}')
```



```
Enter marks: 55
Grade: F
```

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

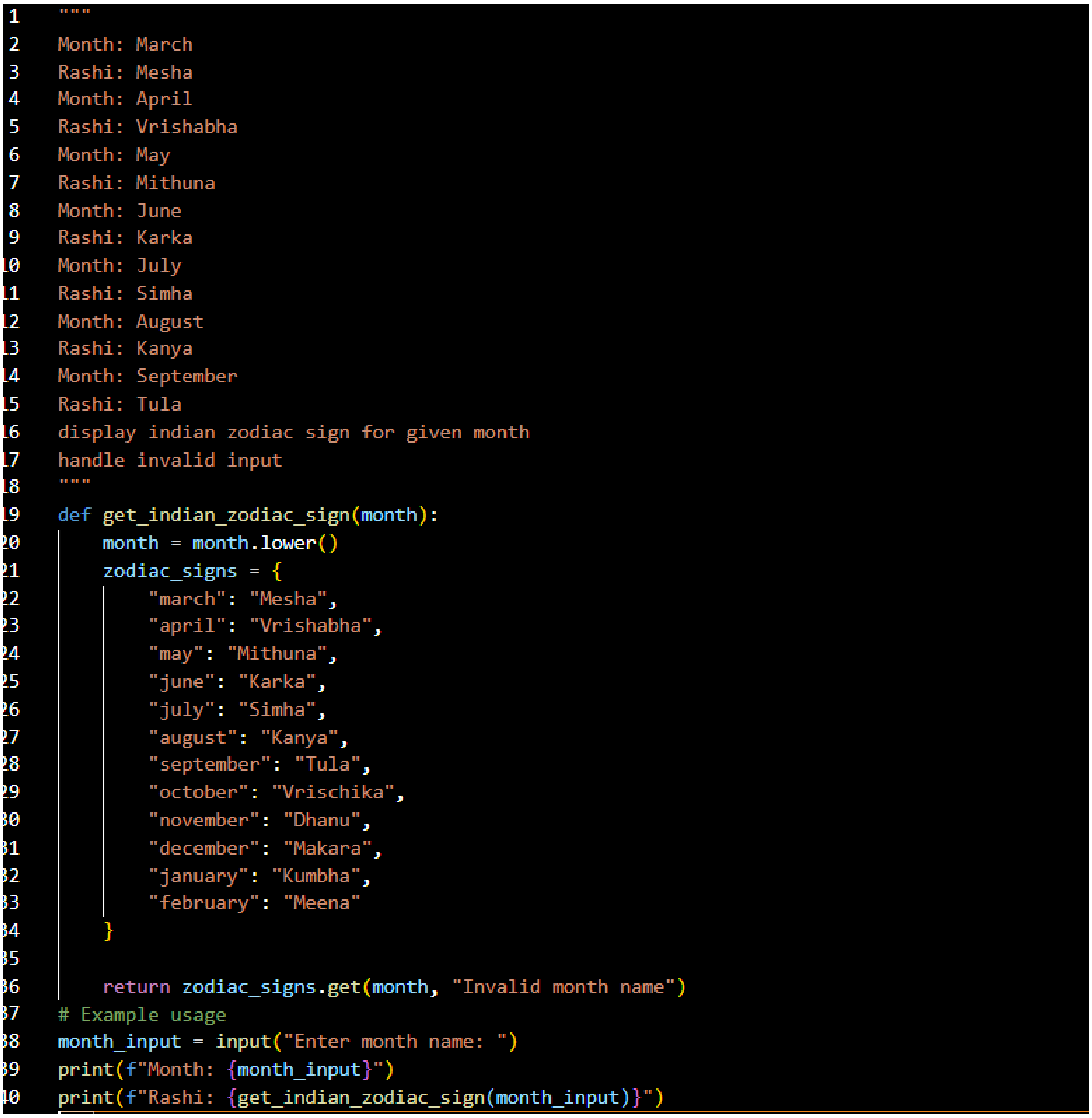
October → Vrischika

November → Dhanu

December → Makara

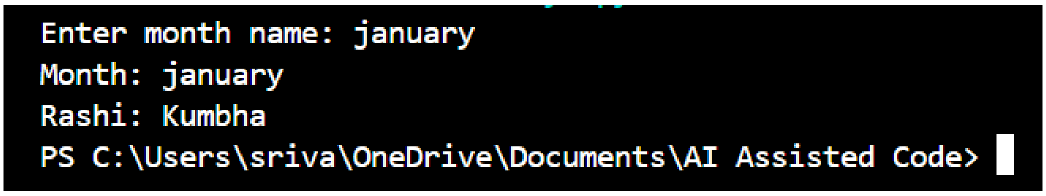
January → Kumbha

February → Meena



```python
"""
Month: March
Rashi: Mesha
Month: April
Rashi: Vrishabha
Month: May
Rashi: Mithuna
Month: June
Rashi: Karka
Month: July
Rashi: Simha
Month: August
Rashi: Kanya
Month: September
Rashi: Tula
display indian zodiac sign for given month
handle invalid input
"""
def get_indian_zodiac_sign(month):
    month = month.lower()
    zodiac_signs = {
        "march": "Mesha",
        "april": "Vrishabha",
        "may": "Mithuna",
        "june": "Karka",
        "july": "Simha",
        "august": "Kanya",
        "september": "Tula",
        "october": "Vrischika",
        "november": "Dhanu",
        "december": "Makara",
        "january": "Kumbha",
        "february": "Meena"
    }

    return zodiac_signs.get(month, "Invalid month name")
# Example usage
month_input = input("Enter month name: ")
print(f"Month: {month_input}")
print(f"Rashi: {get_indian_zodiac_sign(month_input)}")
```



```
Enter month name: january
Month: january
Rashi: Kumbha
PS C:\Users\sriva\OneDrive\Documents\AI Assisted Code>
```

Q5. Result Analysis Based on Marks

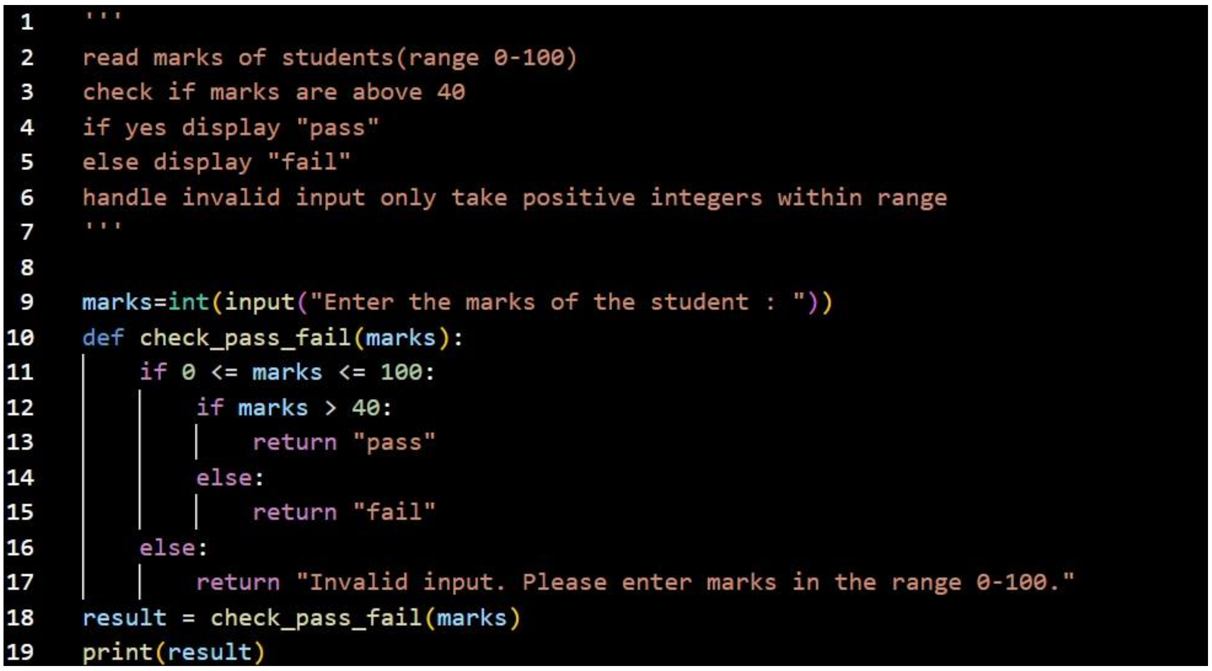
Task: Write a Python program that determines whether a student

Passes or Fails based on marks using Chain-of-Thought (CoT)

prompting.

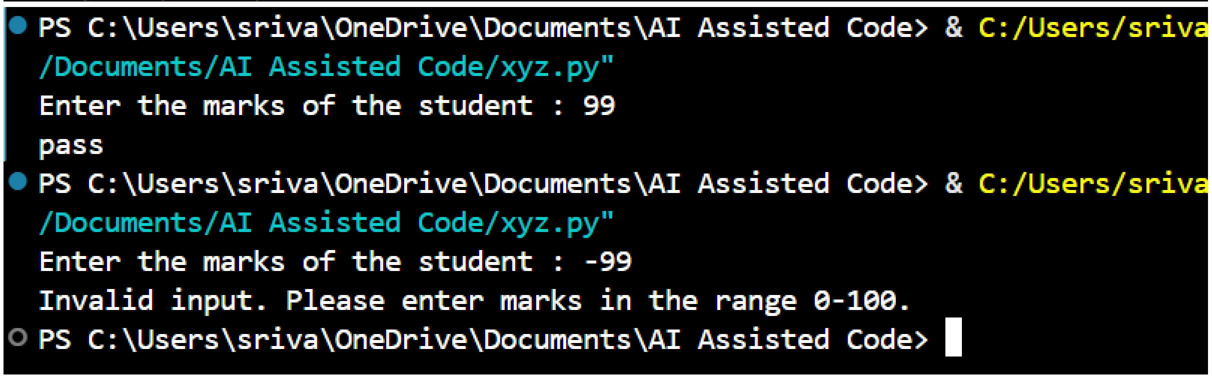
Result Categories:

['Pass', 'Fail']



```python
'''
read marks of students(range 0-100)
check if marks are above 40
if yes display "pass"
else display "fail"
handle invalid input only take positive integers within range
'''

marks=int(input("Enter the marks of the student : "))
def check_pass_fail(marks):
    if 0 <= marks <= 100:
        if marks > 40:
            return "pass"
        else:
            return "fail"
    else:
        return "Invalid input. Please enter marks in the range 0-100."
result = check_pass_fail(marks)
print(result)
```

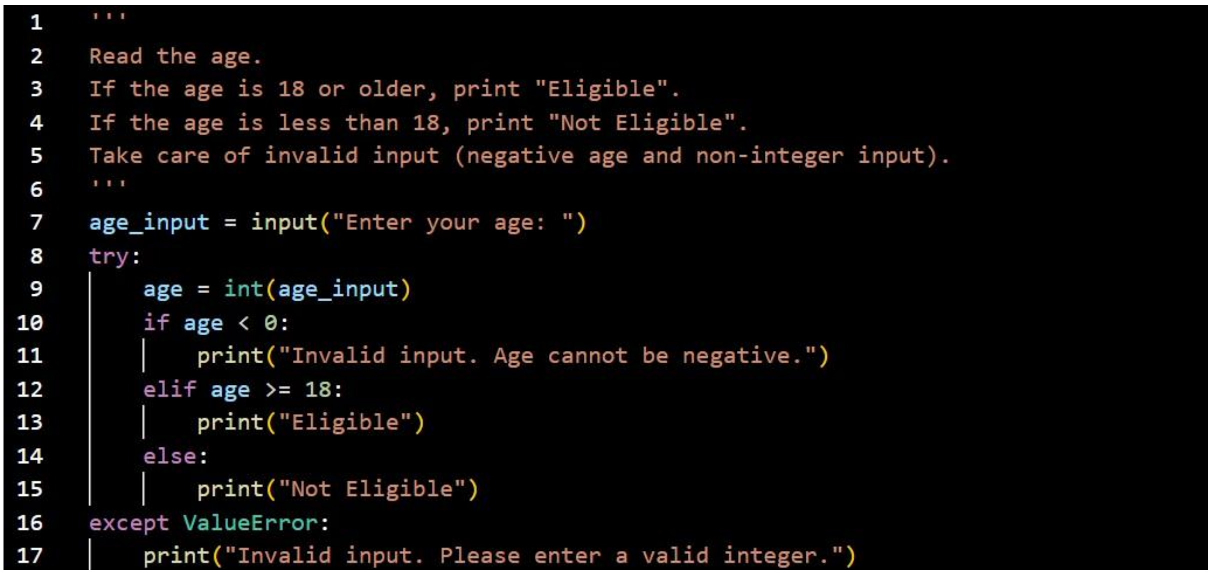


```
PS C:\Users\sriva\OneDrive\Documents\AI Assisted Code> & C:/Users/sriva
/Documents/AI Assisted Code/xyz.py"
Enter the marks of the student : 99
pass
PS C:\Users\sriva\OneDrive\Documents\AI Assisted Code> & C:/Users/sriva
/Documents/AI Assisted Code/xyz.py"
Enter the marks of the student : -99
Invalid input. Please enter marks in the range 0-100.
PS C:\Users\sriva\OneDrive\Documents\AI Assisted Code>
```

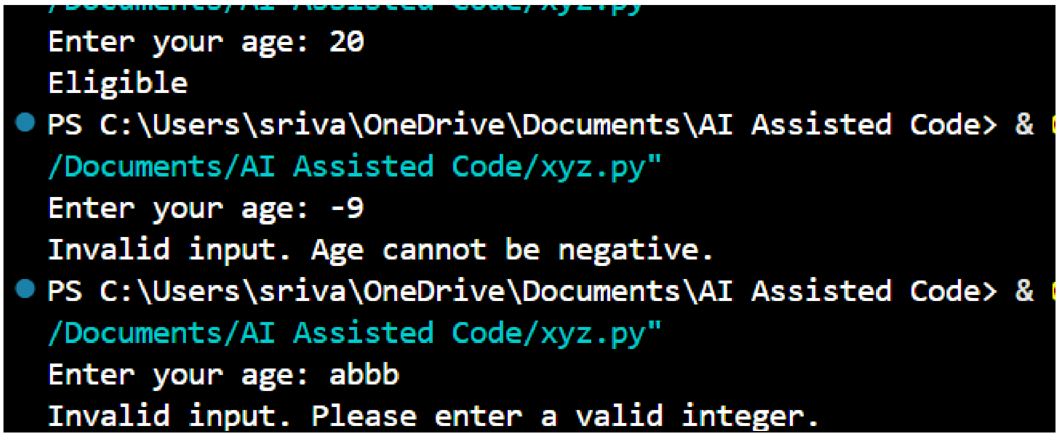
Q6 Voting Eligibility Check (Chain-of-Thought Prompting)

Task: Write a Python program that determines whether a person is

eligible to vote using Chain-of-Thought (CoT) prompting.



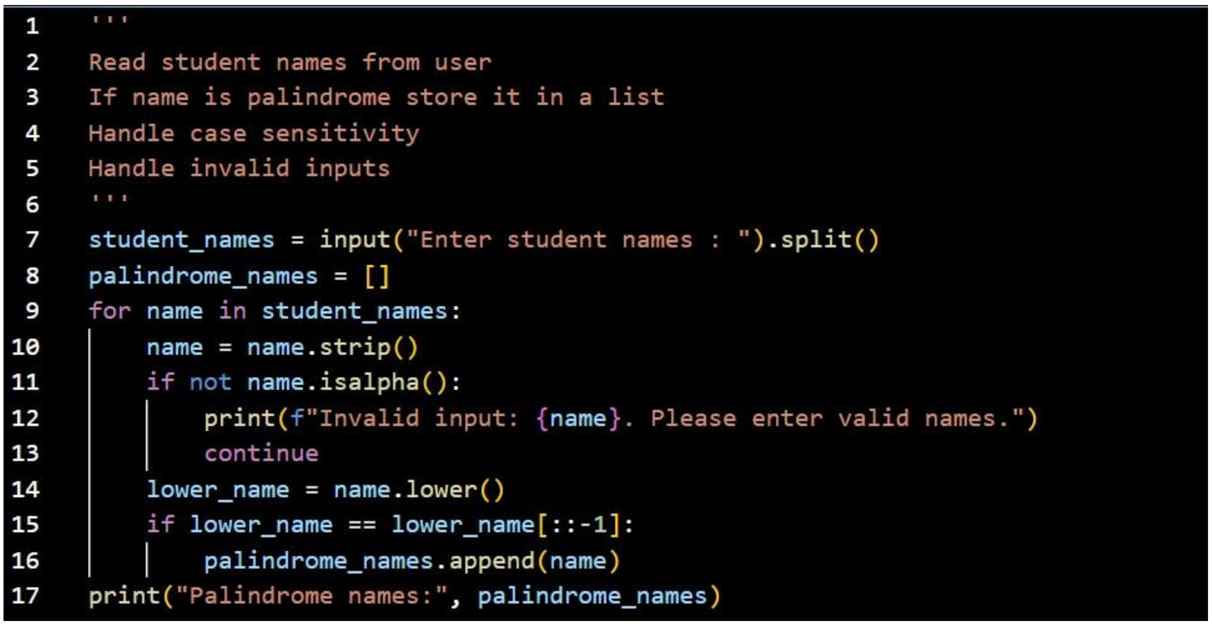
```python
'''
Read the age.
If the age is 18 or older, print "Eligible".
If the age is less than 18, print "Not Eligible".
Take care of invalid input (negative age and non-integer input).
'''
age_input = input("Enter your age: ")
try:
    age = int(age_input)
    if age < 0:
        print("Invalid input. Age cannot be negative.")
    elif age >= 18:
        print("Eligible")
    else:
        print("Not Eligible")
except ValueError:
    print("Invalid input. Please enter a valid integer.")
```



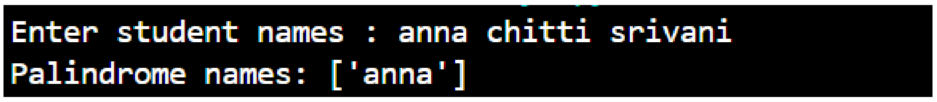
```
Enter your age: 20
Eligible
PS C:\Users\sriva\OneDrive\Documents\AI Assisted Code> &
/Documents/AI Assisted Code/xyz.py"
Enter your age: -9
Invalid input. Age cannot be negative.
PS C:\Users\sriva\OneDrive\Documents\AI Assisted Code> &
/Documents/AI Assisted Code/xyz.py"
Enter your age: abbb
Invalid input. Please enter a valid integer.
```

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.



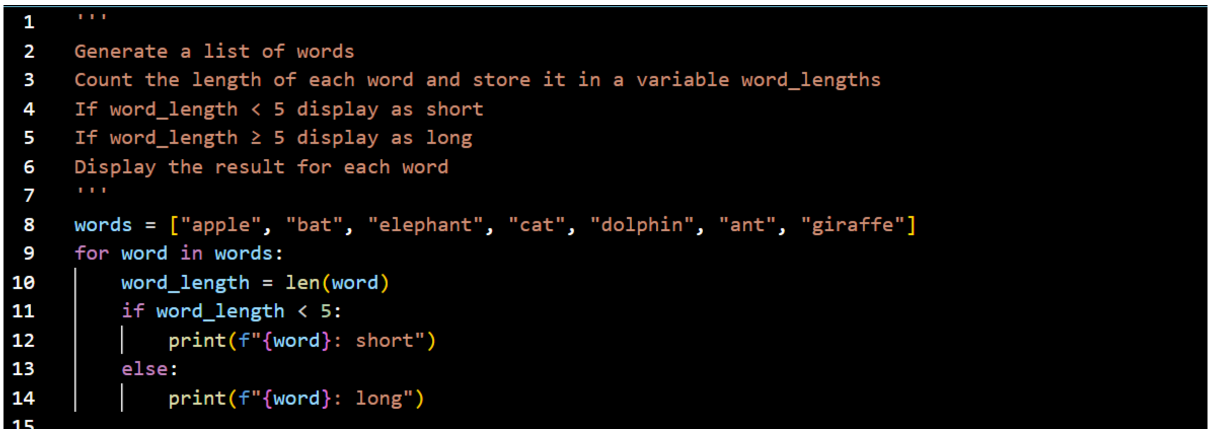
```python
'''
Read student names from user
If name is palindrome store it in a list
Handle case sensitivity
Handle invalid inputs
'''
student_names = input("Enter student names : ").split()
palindrome_names = []
for name in student_names:
    name = name.strip()
    if not name.isalpha():
        print(f"Invalid input: {name}. Please enter valid names.")
        continue
    lower_name = name.lower()
    if lower_name == lower_name[::-1]:
        palindrome_names.append(name)
print("Palindrome names:", palindrome_names)
```



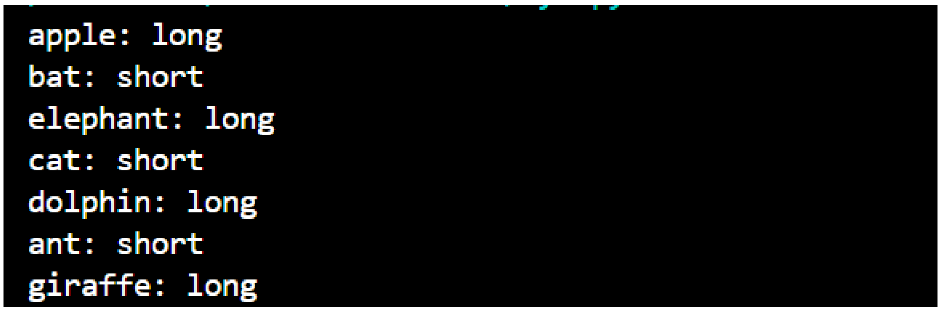
```
Enter student names : anna chitti srivani
Palindrome names: ['anna']
```

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



```
'''
Generate a list of words
Count the length of each word and store it in a variable word_lengths
If word_length < 5 display as short
If word_length ≥ 5 display as long
Display the result for each word
'''
words = ["apple", "bat", "elephant", "cat", "dolphin", "ant", "giraffe"]
for word in words:
    word_length = len(word)
    if word_length < 5:
        print(f"{word}: short")
    else:
        print(f"{word}: long")
```



```
apple: long
bat: short
elephant: long
cat: short
dolphin: long
ant: short
giraffe: long
```