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## **Lab assignment 4.1**

**Q1:**

**Prompt:#Write a Python function that classifies a given text as Spam or Not Spam**

**Code:**

```
def classify_text(text):
    spam_keywords = ['win', 'free', 'prize', 'click', 'buy now', 'limited time', 'offer', 'winner']
    text_lower = text.lower()

    for keyword in spam_keywords:
        if keyword in text_lower:
            return "Spam"

    return "Not Spam"

# Example usage
texts = [
    "Congratulations! You have won a free lottery ticket.",
    "Hello, how are you doing today?",
    "Limited time offer! Click here to buy now.",
    "Don't forget our meeting tomorrow."
]

classifications = {text: classify_text(text) for text in texts}
print(classifications)

# Output: {'Congratulations! You have won a free lottery ticket.': 'Spam', 'Hello, how are you doing today?': 'Not Spam', 'Limited time offer! Click here to buy now.': 'Spam', "Don't forget our meeting tomorrow.": 'Not Spam'}
```

**Output:**

```
{'Congratulations! You have won a free lottery ticket.Hello, how are you doing today?':  
'Spam',  
'Limited time offer! Click here to buy now.': 'Spam',  
"Don't forget our meeting tomorrow.": 'Not Spam'}
```

**Q2:prompt:**

""

i am happy today. output:happy

""

```
#write a python program that detects the emotion of a sentence and  
emotions=[happy,sad,angry,excited,nervous,neutral]
```

```
def detect_emotion(sentence):  
    emotions = ['happy', 'sad', 'angry', 'excited', 'nervous', 'neutral']  
    sentence = sentence.lower()
```

```
if 'happy' in sentence or 'joy' in sentence or 'pleased' in sentence:
```

```
    return 'happy'
```

```
elif 'sad' in sentence or 'unhappy' in sentence or 'sorrow' in sentence:
```

```
    return 'sad'
```

```
elif 'angry' in sentence or 'mad' in sentence or 'furious' in sentence:
```

```
    return 'angry'
```

```
elif 'excited' in sentence or 'thrilled' in sentence or 'eager' in sentence:
```

```
    return 'excited'
```

```
elif 'nervous' in sentence or 'anxious' in sentence or 'worried' in sentence:
```

```
    return 'nervous'
```

```
else:
```

```
    return 'neutral'
```

```
# Example usage
```

```
sentence = "i am very sad"
```

```
emotion = detect_emotion(sentence)
```

```
print(emotion)
```

```
# Output: happy
```

### **Q3**

#### **Prompt:**

...

**90–100 → A**

**80–89 → B**

**70–79 → C**

**60–69 → D**

**Below 60 → F**

...

**#write a python program that predict a student's grade based on marks.**

```
marks = int(input("Enter the student's marks: "))
```

```
if 90 <= marks <= 100:
```

```
    grade = 'A'
```

```
elif 80 <= marks < 90:
```

```
    grade = 'B'
```

```
elif 70 <= marks < 80:
```

```
    grade = 'C'
```

```
elif 60 <= marks < 70:
```

```
    grade = 'D'
```

```
else:
```

```
    grade = 'F'
```

```
print(f"The student's grade is: {grade}")
```

Output: Enter the student's marks: 88

The student's grade is: B

### **Q4:**

#### **Prompt:**

...

**March → Mesha**

**April → Vrishabha**

**May → Mithuna**

**June → Karka**

**July → Simha**

**August → Kanya**

**September → Tula**

**October → Vrischika**

**November → Dhanu**

**December → Makara**

**January → Kumbha**

**February → Meena**

...

#write a python program that predicts a persons zodiac sign based on month of birth

```
def zodiac_sign(month):
```

```
    zodiac_dict = {
```

```
        "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_dict.get(month, "Invalid month")
month_input = input("Enter your month of birth: ")
print(f"Your zodiac sign is: {zodiac_sign(month_input)}")
```

output: Enter your month of birth: October

Your zodiac sign is: Vrischika

Q5:

**Prompt:**

""

**Read the marks from the user.**

**based on marks determine whether student passed or not.**

**handle invalid inputs**

""

**Code:**

```
def check_pass_fail(marks):
    try:
        marks = float(marks)
        if marks < 0 or marks > 100:
            raise ValueError("Marks should be between 0 and 100.")

        if marks >= 40:
            return "Passed"
        else:
            return "Failed"
    except ValueError as e:
        return str(e)
```

```
print("Enter the marks obtained by the student:")
user_input = input()
result = check_pass_fail(user_input)
print(result)
```

Output: 45

Passed

## Q6.

### Prompt:

...

**read the age of the user**

**print he can vote or not**

**handle invalid cases**

...

Code:

```
def can_vote(age):
    try:
        age = int(age)
        if age < 0:
            return "Invalid age. Age cannot be negative."
        elif age >= 18:
            return "You are eligible to vote."
        else:
            return "You are not eligible to vote."
    except ValueError:
        return "Invalid input. Please enter a valid age."
user_age = input("Enter your age: ")
print(can_vote(user_age))
```

Output: Enter your age: 19

You are eligible to vote.

**Q7:**

**Prompt:**

...

**Generate a list that named names consists of some names**

**from list names if the name is palindrome add it to the list palindrome\_names**

**handle invalid cases**

...

```
def is_palindrome(name):
```

```
    # Check if the name is a palindrome
```

```
    return name == name[::-1]
```

```
def get_palindrome_names(names):
```

```
    palindrome_names = []
```

```
    for name in names:
```

```
        if not isinstance(name, str):
```

```
            print(f"Invalid name: {name}. Skipping.")
```

```
            continue
```

```
        if is_palindrome(name):
```

```
            palindrome_names.append(name)
```

```
    return palindrome_names
```

```
names = ["Anna", "Bob", "Cathy", "David", "Eve", 123, None, "Madam"]
```

```
palindrome_names = get_palindrome_names(names)
```

```
print("Palindrome names:", palindrome_names)
```

**Output:**

```
[Anna,bob,David,eve]
```

**Q8:**

**Prompt:**

...

generate a list of words named words\_list  
traverse the list and calculate the length of each word.  
if length is less than 5 make a list and add as "short" to list  
if length greater than 7 add as "long" to list

..."

Code:

```
words_list = ["apple", "banana", "kiwi", "strawberry", "fig", "watermelon", "pear", "grape"]  
length_category = []  
for word in words_list:  
    if len(word) < 5:  
        length_category.append("short")  
    elif len(word) > 7:  
        length_category.append("long")  
print(length_category)
```

**Output: ['short', 'long', 'short', 'long', 'short']**