Class Exercise:

RegEx v1

You are given a text document that contains various lines of text. Your task is to create a Python class that utilizes regular expressions to perform the following operations:

1. Extract all the email addresses from the text document.
2. Replace all occurrences of a given pattern with a specified replacement string.
3. Split the text document into a list of sentences.
4. Find and print all the occurrences of a particular pattern in the text document.

Your class should have the following methods:

1. **extract\_emails(text):** This method takes a string text as input and uses the **re.search** function to find and extract all the email addresses present in the text. It should return a list of extracted email addresses.
2. **replace\_pattern(text, pattern, replacement):** This method takes a string text, a regular expression pattern, and a replacement string replacement. It uses the **re.sub** function to replace all occurrences of the pattern in the text with the specified replacement string. It should return the modified text.
3. **split\_sentences(text):** This method takes a string text as input and uses the **re.split** function to split the text into a list of sentences. It should return the list of sentences.
4. **find\_pattern(text, pattern):** This method takes a string text and a regular expression pattern as input. It uses the **re.finditer** function to find all occurrences of the pattern in the text and prints them.

import re

class TextProcessor:

    def extract\_emails(self, text):

# Your code here

    def replace\_pattern(self, text, pattern, replacement):

# Your code here

    def split\_sentences(self, text):

# Your code here

    def find\_pattern(self, text, pattern):

# Your code here

# Example usage:

doc = """

Lorem ipsum dolor sit amet, consectetur adipiscing elit.

Email addresses: john.doe@example.com, jane\_smith@example.com, info@example.com.

Lorem ipsum dolor sit amet, consectetur adipiscing elit. Sed varius nisl id urna blandit,

eu fringilla nunc consequat. Nulla facilisi.

"""

processor = TextProcessor()

# Extract email addresses

emails = processor.extract\_emails(doc)

print("Extracted emails:", emails)

# Replace pattern

modified\_doc = processor.replace\_pattern(doc, r'Lorem', 'REPLACED')

print("Modified doc:\n", modified\_doc)

# Split sentences

sentences = processor.split\_sentences(doc)

print("Sentences:", sentences)

# Find pattern

processor.find\_pattern(doc, r'\b\w+@example\.com\b')

Expected output:

Extracted emails: ['john.doe@example.com', 'jane\_smith@example.com', 'info@example.com']

Modified doc:

REPLACED ipsum dolor sit amet, consectetur adipiscing elit.

Email addresses: john.doe@example.com, jane\_smith@example.com, info@example.com.

REPLACED ipsum dolor sit amet, consectetur adipiscing elit. Sed varius nisl id urna blandit,

eu fringilla nunc consequat. Nulla facilisi.

Sentences: ['Lorem ipsum dolor sit amet, consectetur adipiscing elit.', 'Email addresses: john.doe@example.com, jane\_smith@example.com, info@example.com.', 'Lorem ipsum dolor sit amet, consectetur adipiscing elit.', 'Sed varius nisl id urna blandit, \neu fringilla nunc consequat.', 'Nulla facilisi.']

john.doe@example.com

jane\_smith@example.com

info@example.com