West Visayas State University

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Exercise for Unit 2

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Year and Section: <u>BSCS 3A-AI</u>

Note: Write your answers in a one whole sheet of paper.

1. **Updating ELIZA.** Modify the ELIZA python implementation shared to the class by performing the following:

   (10 points each) Add 5 RegEx patterns to capture:
   a. I want to know the reasons why I am feeling depressed all the time.
   b. I am feeling stressed.
   c. My feelings towards my crush are invalidated.
   d. You don't understand me OR You do not understand me.
   e. I can't focus on my studies OR I cannot focus on my studies.

   BONUS! (10 points) Modify the code so that if the user tries to repeat the same question, ELIZA will answer sarcastically on repeating the question.

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================================================================
ELIZA CHATBOT - Interactive Session
================================================================
ELIZA: Hello! How can I help you today?
ELIZA: (Type 'quit' or 'exit' to end the conversation)
You: a. I want to know the reasons why I am feeling depressed all the time.
ELIZA: Feeling depressed all the time is serious. Have you considered exploring what triggers these feelings? When did you first notice this pattern?
You: b. I am feeling stressed.
ELIZA: Stress can be overwhelming. What do you think is the main source of your stress right now?
You: c. My feelings towards my crush are invalidated.
ELIZA: It must be painful to feel that your feelings aren't being acknowledged. Can you tell me more about what happened with your crush?
You: d. You don't understand me OR You do not understand me.
ELIZA: I'm trying my best to understand you. Can you help me by explaining what I'm missing?
You: e. I can't focus on my studies OR I cannot focus on my studies.
ELIZA: Difficulty focusing on studies is a common challenge. What distractions or thoughts are preventing you from concentrating?
You: b. I am feeling stressed.
ELIZA: Are you testing my memory or yours? Because we've been through this already.
You:
```

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2. **Implementing RegEx on NLP.** Perform the following preprocessing techniques using RegEx.

   a. (10 points) Extract all of the *words starting with an upper case letter* from the text:

   Alice was beginning to get very tired of sitting by her sister on the bank, and of having nothing to do. Once or twice she had peeped into the book her sister was reading, but it had no pictures or conversations in it, "and what is the use of a book," thought Alice, "without pictures or conversations?
   RegEx pattern:

```
================================================================================
TASK 2A: Extract Words Starting with Uppercase Letter
================================================================================
RegEx Pattern: \b[A-Z][a-z]*\b
RegEx Pattern: \b[A-Z][a-z]*\b
RegEx Pattern: \b[A-Z][a-z]*\b


Original Text:
Alice was beginning to get very tired of sitting by her sister on the bank, and of having nothing to do.  Once or twice she had peeped into the book her
 sister was reading, but it had no pictures or conversations in it, "and what is the use of a book," thought Alice, "without pictures or conversations?

Words starting with uppercase letter:
['Alice', 'Once', 'Alice']

Total count: 3
================================================================================
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b. (15 points) Read the "melville-moby_dick.txt" into a Python program and extract all of the instances of the word *Whale, Whales, whale and whales* in said source. Then replace the first 10 instances with the word "leviathan".

RegEx pattern:

```
================================================================================
TASK 2B: Extract and Replace Whale/Whales Instances
================================================================================
RegEx Pattern: \b[Ww]hales?\b

Total instances of Whale/Whales/whale/whales found: 1489

Breakdown:
  Whale: 308
  Whales: 31
  whale: 911
  whales: 239

First 10 instances (with context):
  1. ...g eBook of Moby Dick; Or, The Whale      This ebook is for the us...
  2. ...k.  Title: Moby Dick; Or, The Whale  Author: Herman Melville  Rel...
  3. ...PTER 42. The Whiteness of the Whale.  CHAPTER 43. Hark!  CHAPTER ...
  4. ... Of the Monstrous Pictures of Whales.  CHAPTER 56. Of the Less Err...
  5. ...he Less Erroneous Pictures of Whales, and the True Pictures of Wha...
  6. ...aling Scenes.  CHAPTER 57. Of Whales in Paint; in Teeth; in Wood; ...
  7. ...e.  CHAPTER 61. Stubb Kills a Whale.  CHAPTER 62. The Dart.  CHAP...
  8. ...bb's Supper.  CHAPTER 65. The Whale as a Dish.  CHAPTER 66. The S...
  9. ... Stubb and Flask kill a Right Whale; and Then Have a Talk over Hi...
 10. ...r Him.  CHAPTER 74. The Sperm Whale's Head—Contrasted View.  CHAP...

√ Successfully replaced first 10 instances with 'leviathan'
√ Modified text saved to: melville-moby_dick_modified.txt

Verification - First 10 instances after replacement:
  1. ...g eBook of Moby Dick; Or, The leviathan      This ebook is for the us...
  2. ...k.  Title: Moby Dick; Or, The leviathan  Author: Herman Melville  Rel...
  3. ...PTER 42. The Whiteness of the leviathan.  CHAPTER 43. Hark!  CHAPTER ...
  4. ... Of the Monstrous Pictures of leviathan.  CHAPTER 56. Of the Less Err...
  5. ...he Less Erroneous Pictures of leviathan, and the True Pictures of Wha...
  6. ...aling Scenes.  CHAPTER 57. Of leviathan in Paint; in Teeth; in Wood; ...
  7. ...e.  CHAPTER 61. Stubb Kills a leviathan.  CHAPTER 62. The Dart.  CHAP...
  8. ...bb's Supper.  CHAPTER 65. The leviathan as a Dish.  CHAPTER 66. The S...
  9. ... Stubb and Flask kill a Right leviathan; and Then Have a Talk over Hi...
 10. ...r Him.  CHAPTER 74. The Sperm leviathan's Head—Contrasted View.  CHAP...
================================================================================
```

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c. (15 points) Download the NLTK package into your local environment and import *webtext (from nltk.corpus import webtext).* Load the pirates.txt and extract all of the lines spoken by the character Jack Sparrow.

RegEx pattern:

```
✓ NLTK installed successfully

Downloading webtext corpus...

RegEx Patterns used:
  1. Jack Sparrow:\s*(.+?)(?=\n[A-Z]|\n\n|$)
  2. JACK SPARROW:\s*(.+?)(?=\n[A-Z]|\n\n|$)
  3. JACK:\s*(.+?)(?=\n[A-Z]|\n\n|$)

Total lines spoken by Jack Sparrow: 190

First 10 lines spoken by Jack Sparrow:
  1. Sorry, mate.
  2. Mind if we make a little side trip? I didn't think so.
  3. Complications arose, ensued, were overcome.
  4. Mm-hmm!
  5. Shiny?
  6. Is that how you're all feeling, then? Perhaps dear old Jack is not serving your best interests as ca...
  7. What did the bird say?
  8. Ohhh!
  9. It does me.
  10. No! Much more better. It is a *drawing* of a key.

  ... and 180 more lines

✓ Jack Sparrow's lines saved to: jack_sparrow_lines.txt
================================================================================
```