AI Assignment: Basic List Processing

Overview

This very modest programming exercise is intended to provide you with an opportunity to do just a little bit of simple interactive list processing. You will be asked to mimic two sample Lisp sessions, previously presented, and to engage in another Lisp session that is consistent with a number of constraints. Finally, you are asked to post your work to your AI Work Site in a reasonable way.

Note: When mimicking previously presented sessions, no worry if you mistype something. Simply leave the misstep in, and carry on with what you meant to type. This is a common enough occurrence. Same for the novel Lisp session.

What will you learn?

Upon successful completion of this exercise it is anticipated that you will be able to:

1. Make effective use of the icons of list processing in Lisp.
2. Make effective use of some very useful higher level list processing primitives.

Task 0: Establish a Solution Document for this Assignment

Quickly read through the remaining tasks so that you will be in a good position to create a structurally sound stub of a solution document. Then, create it. Simply reserve spots in your solution document to place the work that you do for Tasks 1 through 3.

Task 1: Mimic "Lisp Session: `CAR`, `CDR` and `CONS`"

Simply do the following:

1. Start a Lisp process.
2. Mimic "Text Session: Abstract Session featuring `CAR`, `CDR` and `CONS`".

3. Copy the sesion to the place for it that you reserved in the solution document.

Task 2: Mimic "Redacted Lisp Session: Three additional referencers and constructors"

Simply do the following:

1. Start a Lisp process.
2. Mimic the "Redacted Lisp Session: Three additional referencers and constructors" Lisp session (being sure not to redact the output!) that was previously presented.
3. Copy the sesion to the place for it that you reserved in the solution document.

Task 3: Create a Lisp session according to specification

Start Lisp, and then create a Lisp session by entering 9 Lisp forms, in turn, that correspond to the following English specifications:

1. Bind the symbol `ENGLISH` to the list `(ONE TWO THREE FOUR)`.
2. Bind the symbol `FRENCH` to the list `(UN DEUX TROIS QUATRE)`.
3. Bind the symbol `PAIR1` to the pair `(ONE UN)` by means of a form involving one occurrence of `LIST`, two occurrences of `CAR`, and the symbols `ENGLISH` and `FRENCH`.
4. Bind the symbol `PAIR2` to the pair `(TWO DEUX)` by means of a form involving one occurrence of `LIST`, two occurrences of `CAR`, two occurrences of `CDR`, and the symbols `ENGLISH` and `FRENCH`.
5. Bind the symbol `PAIR3` to the pair `(THREE TROIS)` by means of a form involving one occurrence of `LIST`, two occurrences of `NTH`, and the symbols `ENGLISH` and `FRENCH`.
6. Bind the symbol `PAIR4` to the pair `(FOUR QUATRE)` by means of a form involving one occurrence of `LIST`, two occurrences of `NTH`, and the symbols `ENGLISH` and `FRENCH`.
7. Bind the symbol `DICTIONARY` to the list `((ONE UN) (TWO DEUX) (THREE TROIS) (FOUR QUATRE))` by means of a form involving one occurrence of `LIST`, and the symbols `PAIR1`, `PAIR2`, `PAIR3` and `PAIR4`.
8. Bind the symbol `EF-WORDS` to the list `( ONE UN TWO DEUX THREE TROIS FOUR QUATRE )` by means of a form involving one occurrence of `APPEND`, and the symbols `PAIR1`, `PAIR2`, `PAIR3` and `PAIR4`.
9. Bind the symbol `ALT-WORDS` to the list `( ONE TWO THREE FOUR UN DEUX TROIS QUATRE )` by means of a form involving one occurrence of `APPEND`, and the symbols `ENGLISH` and `FRENCH`.

Copy the sesion to the place for it that you reserved in the solution document.

Task 4: Web work site

Make “an entry” for this programming challenge on your web work site.

Due Date

Friday, September 9, 2022