EXERCISE 1.2: DATA TYPES IN PYTHON

REFLECTION QUESTIONS

1. *IMAGINE YOU'RE HAVING A CONVERSATION WITH A FUTURE COLLEAGUE ABOUT WHETHER TO USE THE IPYTHON SHELL INSTEAD OF PYTHON'S DEFAULT SHELL. WHAT REASONS WOULD YOU GIVE TO EXPLAIN THE BENEFITS OF USING THE IPYTHON SHELL OVER THE DEFAULT ONE?*
    - *READABILITY IS NUMBER ONE. THE IPHYTHON SHELL AUTO INDENTS AND SYNTAX HIGHLIGHTS. ALSO IT IS BEST USED FOR TESTING SMALL CHUNKS OF CODE AS IT READS AND IMMEDIATELY PRINTS RESPONSES.*
2. *PYTHON HAS A HOST OF DIFFERENT DATA TYPES THAT ALLOW YOU TO STORE AND ORGANIZE INFORMATION. LIST 4 EXAMPLES OF DATA TYPES THAT PYTHON RECOGNIZES, BRIEFLY DEFINE THEM, AND INDICATE WHETHER THEY ARE SCALAR OR NON-SCALAR.*

Data Type	**Definition**	**Scalar or Non-Scalar**
int	integer (whole number) pos or neg	Scalar
tuples	linear arrays	Non-Scalar
str	string of characters (numbers or letters)	Non-Scalar
bool	boolean (true or false) statement	Scalar

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3. A FREQUENT QUESTION AT JOB INTERVIEWS FOR PYTHON DEVELOPERS IS: WHAT IS THE DIFFERENCE BETWEEN LISTS AND TUPLES IN PYTHON? WRITE DOWN HOW YOU WOULD RESPOND.

- *LISTS INDICATED BY [] SQUARE BRACKETS ARE MUTABLE, CAN BE MODIFIED OR DELETED. CAN BE PUT IN ALPHABETICAL ORDER, ADDED TO SUBTRACTED FROM CAN ALSO SLICE, INDEX, APPEND(), EXTEND(), INSERT() AND MUCH MORE*
- *TUPLES INDICATED BY () PARENTHESES ARE NOT MUTABLE, YOU MUST MAKE A NEW VARIABLE TO ADD TO A TUPLE. THEY ARE A LINEAR ARRAY THAT ARE FASTER TO READ AND ACCESS. YOU CAN SLICE, NESTLE, COUNT AND MANY MORE WHERE THE INDEX ALWAYS STARTS AT ZERO*

4. IN THE TASK FOR THIS EXERCISE, YOU DECIDED WHAT YOU THOUGHT WAS THE MOST SUITABLE DATA STRUCTURE FOR STORING ALL THE INFORMATION FOR A RECIPE. NOW, IMAGINE YOU'RE CREATING A LANGUAGE-LEARNING APP THAT HELPS USERS MEMORIZE VOCABULARY THROUGH FLASHCARDS. USERS CAN INPUT VOCABULARY WORDS, DEFINITIONS, AND THEIR CATEGORY (NOUN, VERB, ETC.) INTO THE FLASHCARDS. THEY CAN THEN QUIZ THEMSELVES BY FLIPPING THROUGH THE FLASHCARDS. THINK ABOUT THE NECESSARY DATA TYPES AND WHAT WOULD BE THE MOST SUITABLE DATA STRUCTURE FOR THIS LANGUAGE-LEARNING APP. BETWEEN TUPLES, LISTS, AND DICTIONARIES, WHICH WOULD YOU CHOOSE? THINK ABOUT THEIR RESPECTIVE ADVANTAGES AND LIMITATIONS, AND WHERE FLEXIBILITY MIGHT BE USEFUL IF YOU WERE TO CONTINUE DEVELOPING THE LANGUAGE-LEARNING APP BEYOND VOCABULARY MEMORIZATION.

- *I BELIEVE USING DICTIONARIES WOULD BE THE BEST POSSIBLE STRUCTURE AS IT ALLOWS EASY OF SORTING DATA IN CASE THE APP UTILIZES THE CAPABILILTY TO SORT BY NOUN OR VERB CATEGORIES*