CSI 31 LECTURE NOTES (Ojakian)

Topic 3: Data Types

OUTLINE

(References: Sweigart Ch. 1)

1. Data Types

2. Integers and Floating Point

3. Strings and Lists

4. Boolean (a start ...)

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1. <u>Data Types</u>

    (a) Integers

    (b) Floating point

    (c) Strings

    (d) Lists

    (e) Boolean

2. <u>Operations on Numbers</u>

    (a) Basic operations: $+, -, *, /, **, abs(), //, \%$

    (b) Special Library Functions

        i. Import "math" Library
        ii. Math library commands: ....

3. <u>Operations on Strings and Lists</u>

    (a) Index a single element (e.g. hello[4], hello[-1])

    (b) Reference a range

    (c) Adding/Concatenating

    (d) Multiplied by number

    (e) *Special string commands*: `len()`, `capitalize()`, `swapcase()`, `lower()`

    (f) *Special list commands*: Assignment.

4. <u>Booleans</u>

    (a) Only two values of boolean: `True`, `False`

    (b) Operations/Connectives: And, Or, Not

    (c) Creating boolean value with boolean tests: $==$ $!=$ $<$ $>$ $<=$ $>=$

5. <u>Trace the run of a program</u>

    (a) Number the lines of the program in order.

    (b) Make a table headed by:

        i. Line number

        ii. All (relevant) variables

        iii. "Results"

    (c) At each row list the consequences of evaluating the current line (i.e. what has happened **after** the line is executed)

    (d) Use vertical dotes: $\vdots$ to skip lines where you see the pattern.