CSI 31 LECTURE NOTES (Ojakian)

Topic 6: For Loops - The Basics

OUTLINE

(References: Sweigart Ch. 2 - part on for loops)

1. `for`-loops

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1. <u>checking with: "in"</u>

    (a) with lists

    (b) with strings

2. <u>`for`-Loop over list or string</u>

    (a) In some specified list

    (b) Over some specified string

    (c) **Do a trace of the run.**

    (d) Write a program that finds the sum of the numbers in a list.

    (e) Write a program to count the number of x in string (and then do it the quick way with count).

3. <u>`for`-Loop using: range</u>

    Basic problems: Print ranges of numbers.

    (a) range(n): goes 0 to $n-1$

    (b) range(a, b): goes a to $b-1$

    (c) range(a, b, s): goes a to $b-1$ with step size $= s$

    (d) Write a program that counts down from some given number n to 1.

4. <u>Examples</u>

    PROBLEM 1. *Write a program that takes a positive integer as input and computes its factorial.*

    Do a trace of the run.

    ***PROBLEM* 2.** *Write a program that takes a positive integer as input and finds the sum from 1 to this number.*

    Do a trace of the run.

    PROBLEM 3. *Write a program that takes a positive integer as input and determines if the integer is prime*

    Consider efficiency issues.

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