

# CSI 32 LECTURE NOTES (Ojakian)

## Topic 2: Sets and Dictionaries

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### OUTLINE

(References: ch 11 of Zelle)

1. Sets (see **more advanced online book** at Course Materials: Basics- Sets)
  2. Dictionaries (Section 11.6 from Zelle)
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#### 1. Sets

- (a) Commands: Creating, `in`, `add`, `remove`, empty set- `set()`, `union`, `intersection`, use with for-loops.

**PROBLEM 1.** *Write a program that repeatedly prompts the user till the user just hits return. It then prints all the items inputed, without repeating items.*

#### 2. Dictionaries

- (a) Key-value pairs.
- (b) Commands: Creating, indexing, setting new values, empty dictionary- `{}`, `in`, use with for-loops.
- (c) More Commands in 11.6.2.

**PROBLEM 2.** *We will write a program with two phases: In phase 1, the program gathers information to build a mini data base, and in phase 2, the user can ask questions about this data base.*

*Write a program that repeatedly prompts the user for input; we will assume that the user always inputs just a single lower case letter at each prompt. This first phase is ended when the user just hits return without entering a letter.*

*For the second phase, the program will repeatedly prompt the user asking which letter she is interested in; whatever letter she enters, the program will print out how many of this letter were entered in the first phase. The second phase is ended when the user just hits return.*

**Plan this out in a top-down fashion!**

#### 3. Pick your datatypes

Recall: `ord` and `chr`.

**\*PROBLEM\* 3.** *Write a program that prompts the user for an input sentence. The program then reports the following:*

- (a) *Which vowels appear in the sentence.*
- (b) *How many non alphabet characters appear in the sentence?*