String Applications

Jerry Cain CS 106AJ October 24, 2018 slides courtesy of Eric Roberts and Jerry Cain

String Calisthenics Let's review some **String** methods you learned about last time: ✓ "AEIOUaeiou".length ✓ "ABCDEFG".charAt(6) "G" √ "Harry Potter".indexOf("a") "Harry Potter".indexOf("a", 6) √ "Harry Potter".lastIndexOf("tt") "bumfuzzle".substring(3, 7) "fuzz" √ "cabotage".substring(1, 1) √ "agelast".substring(3) "last"

Generating Acronyms

- An acronym is a word formed by taking the first letter of each word in a sequence, as in
 - "North American Free Trade Agreement" 🏲 "NAFTA"
 - "not in my back yard" "nimby"
 - "self-contained underwater breathing apparatus" 🏲 "scuba'
- · The text describes and implements two versions of a function acronym(str) that generates an acronym for str:
 - The first version searches for spaces in the string and includes the following character in the acronym. This version, however, fails for acronyms like *scuba*, in which some of the words are separated by hyphens rather than spaces.
 - The second version looks at every character and keeps track of whether the algorithm is scanning a word formed composed of sequential letters. This version correctly handles *scuba* as well as strings that have leading, trailing, or multiple spaces.

acronym, Take I acronym("not in my back yard") function acronym(str) { let result = str.charAt(0); return result; "not in my back yard" -1 "nimby'

acroynm, Take II acronym("In My Humble Opinion") const ALPHABET = "ABCDEFGHIJKLMNOPORSTUVWXYZ" toUpperCase()) !== -1 "IMHO 20 true "n" Console

Translating Pig Latin to English

Section 7.4 works through the design and implementation of a program to convert a sentence from English to Pig Latin. In this dialect, the Pig Latin version of a word is formed by applying the following rules:

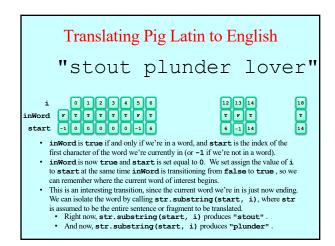
1. If the word begins with a consonant, the wordToPigLatin function moves the initial consonant string to the end of the word and then adds the suffix ay, as follows:

scram 🔷 amscray

2. If the word begins with a vowel, wordToPigLatin generates the Pig Latin version simply by adding the suffix way, like this:

apple - appleway

3. If the word contains no vowels at all, wordToPigLatin returns the original word unchanged.



Function toPigLatin(str) { Initialize a variable called result to hold the growing string. for (seach character position in str) { if (the current character is a letter) { if (twe 'we not yet scanning a word) Remember the start of this word. } else { if (we were scanning a word) { Call wordToPigLatin to translate the word. Append the translated word to the result variable. } Append the separator character to the result variable. } if (we're still scanning a word) { Call wordToPigLatin and append the translated word to result. } } function wordToPigLatin (word) { Find the first vowel in the word. If the vowel appears in the original word unchanged. If the vowel appears in the pass position, return the word concatenated with "way". Divide the string into two parts (head and tail) before the vowel. Return the result of concatenating the tail, the head, and the string "ay". }

