Outline for January 28, 2019

Reading: §6

Assignments: Homework 2, due on February 4

1. Sequences
   a. Sequences are a series of values in a particular order
   b. In Python predominantly strings and lists but also sets and tuples
2. Strings
   a. Sequence of characters (characters are strings of length 1)
   b. Strings are immutable; really important for functions
3. Basic string operations
   a. +, concatenation for strings
   b. *, repetition repeats given value
   c. len() returns length of sequence
   d. s in str returns True if s is a substring of str, False otherwise
4. Indexing, var[position]
   a. Count from 0 to len(var) - 1
   b. Position can be a negative number to count from right
5. Assignment with indexing doesn’t work as strings immutable
   x = 'hEllo'; x[1] = 'e' produces an error
6. Slicing, var[start:end]
   a. Value at index end not included in slice
   b. If omitted, starting value defaults to 0 and ending value defaults to last index + 1
   c. Can use negative index
7. Looping over strings: for i in str
8. Example program [strstuff.py]
9. String methods
   a. Rule: methods that change, add, or delete characters do not alter the string to which they are applied; they return a new string that is a copy of the old string, suitably modified
10. String methods: type of characters in string (return True or False) [strtype.py]
    a. S.isalpha() — True if only alphabetics (letters) in S
    b. S.isalnum() — True if only alphanumerics (letters or digits) in S
    c. S.isdigit() — True if only digits in S
    d. S.isspace() — True if only white space (blanks, tabs, newlines) in S
    e. S.isupper() — True if all letters in S are upper case
    f. S.islower() — True if all letters in S are lower case
11. String methods: changing case of letters in string (return result of applying method) [strchcase.py]
    a. S.capitalize() — If the first character of S is a letter, capitalize it
    b. S.title() — Capitalize each word in S
    c. S.lower() — Change all upper case letters in S to lower case
    d. S.upper() — Change all lower case letters in S to upper case
    e. S.swapcase() — Change all upper case letters in S to lower case and vice versa
12. String methods: stripping blanks from strings (return result of applying method) [strstrip.py]
    a. S.lstrip() — Delete all leading white spaces from S
    b. Srstrip() — Delete all trailing white spaces from S
    c. S.strip() — Delete all leading and trailing white spaces from S
13. String methods: find characters and substrings (return position or cause exception) [strfind.py]
    a. S.find(s) — Return the index of the first occurrence of s in S; -1 if s not in S
    b. S.index(s) — Return the index of the first occurrence of s in S; ValueError exception if s not in S
c. `S.rfind(s)` — Return the index of the last occurrence of `s` in `S`; `-1` if `s` not in `S`

d. `S.rindex(s)` — Return the index of the last occurrence of `s` in `S`; `ValueError` exception if `s` not in `S`

14. String methods: miscellaneous [strmisc.py]

- a. `S.count(s)` — Return the number of times `s` occurs in `S`
- b. `S.startswith(s)` — `True` if `S` starts with `s`
- c. `S.endswith(s)` — `True` if `S` ends with `s`
- d. `S.replace(s, t)` — Replace all occurrences of `s` with `t` in `S`