



<http://www.cs.cornell.edu/courses/cs1110/2021sp>

CS 1110 Prelim 1 Practice/Review Session

Announcements

- A3 due Sun Mar 28
- Prelim 1 Tues Mar 30 at 6:30pm in-person (university-scheduled)
 - Check CMS for your exam info if you requested alternate time/format
 - In-person: Bring pens/pencils/erasers (bring several). Bring a watch or even an actual clock if you have one. No smart watches/phones! You may not be able to see the wall clock in Barton from your seat. Bring Cornell ID.
 - Online: Your proctor will contact you about a mock exam. **You *must* do the mock exam** to be allowed to write the actual exam.
- Read Prelim 1 Study Guide. *Note spring different from fall.*
- Tues Mar 30 lecture and lab time → office hours
- Wedn Mar 31 no labs (so no new lab exercises next week)

Exam Topics

- String slicing functions
- Call frames and the call stack
- Functions on mutable objects
- Testing and debugging
- Conditionals
- Lists and simple iteration

Dictionaries *not* on Prelim 1

Prelim 1 Review

Today:

- *Start with [lists and iteration](#)—not in posted old review slides*
- *[Testing and debugging](#)*
- *Other topics if time allows*

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Lists, Iteration, Strings

def count_non_space_chars(myList):

"""Returns: number of non-space characters in the strings in myList.

Example: count_non_space_chars(['U', 'r', ', ', 'gr8']) returns 5

Precondition: myList is a list of strings. Each string in myList can contain only spaces, letters, digits."""

You *should know* the methods that we actually have used in assignments and labs. We will give you the less-frequently used methods on the exam.

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Lists, Iteration, Types

def inflate(myList, p_percent):

"""Inflate each number in myList by p_percent while maintaining the type (int or float). For any int in myList, round down the inflation. Precondition: myList is a list of positive numbers (int and/or float). Precondition: p_percent is a positive number (int or float)."""

An example:

```
>>> aList= [100, 100.0, 1, 1.0]
>>> p= 1.6
>>> inflate(aList,p)
>>> aList
[101, 101.6, 1, 1.016]
```

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def inflate(myList, p_percent):

"""Inflate each number in myList by p_percent while maintaining the type (int or float). For any int in myList, round down the inflation.

Precondition: myList is a list of positive numbers (int and/or float).

Precondition: p_percent is a positive number (int or float)."""

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Constructing test cases

```
def before_space(s):
    """Returns: the substring before the first space character in string s.
    Precondition: string s contains at least one space."""
```

Come up with at least three *distinct* test cases. Write the test input, expected output, and rationale.

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What should I be testing?

Common Cases: typical usage

Edge Cases: live at the boundaries

- **Target location in list:** first, middle, last elements
- **Input size:** 0,1,2, many (length of lists, strings, etc.)
- **Input Orders:** e.g., max(big, small), max(small, big)...
- **Element values:** negative/positive, zero, odd/even
- **Element types:** int, float, str, etc.
- **Expected results:** negative, 0, 1, 2, many

*Not all categories/cases apply to all functions.
Use your judgement!*

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Functions on Objects

- Class: **Rect**

- Constructor function: **Rect(x,y,width,height)**
- Remember constructor is just a function that gives us an object of that type and returns its identifier

Attribute	Description
x	float, x coord of lower left corner
y	float, y coord of lower left corner
width	float, > 0 , width of rectangle
height	float, > 0 , height of rectangle

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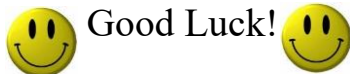
```
def move(r, xc, yc):
```

```
    """Set the attributes of Rect `r` such that its center lies on the x- and
    y-coordinates `xc` and `yc`, respectively.
```

```
    Precondition: r is a Rect object.
```

```
    Precondition: xc, yc are each a float."""
```

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