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CNIT 15501

Week 11 deliverable

What can be in a list?

2D lists

A list can include other lists. When this happens, it is called a 2d list. The following in an example of a 2d list:

my\_list = [[1, 2, 3], [4, 5, 6], [7, 8, 9], [10, 11, 12]]

in this case, the value of my\_list[1] would be [4, 5, 6], since that list is at index 1 of my\_list.

So what if you wanted to get the number 6 from this list? You must specify the index for both lists. In order to get 6, you would use my\_list[1][2]

In the above example, the first number determines the index in the first list, while the second number determines the index in the smaller list within the list.

Ragged Lists vs Tables

If a 2d list includes multiple lists that are all the same length, it is called a **table**. If it contains multiple lists of different length, it is instead called a **ragged list**.

Table example: [[1, 2, 3], [4, 5, 6], [7, 8, 9], [10, 11, 12]]

This list has 4 elements, each of which is a list with 3 integers.

Ragged list example: [[1, 4], [62, 53, 6], [7]]

This list has 3 elements, each of which is a list of a different length.

Comparing Lists

Lists can be compared with operators such as >, <, and =. When two lists are compared, the first value of each list is checked, then the second, then the third, and so on. As soon as one list has a higher value than the other, that list is considered greater. If two lists are the same, except that one is longer, the longer one is greater.

Selection Sort

In a selection short, the program checks every number in the list to find which one is the smallest. This number is then swapped with the one in the first spot (index 0). Then, it finds the second smallest and swaps it with the number in the second spot, and so on, until the list is completely organized.