UNIT 5: ACTIVITY 3
TEACHER NOTES

Unit 5: Recursion & Lists

Activity 3: Operating on Lists

In this lesson, you will learn how to edit **lists** in programs, including how to add, delete, and rearrange elements in a list.

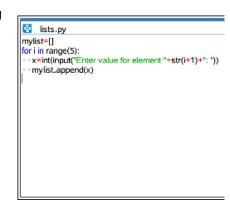
Objectives:

- Perform operations on lists and their elements
- Use operations to analyze lists and their elements

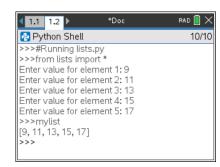
Entering Values into a List Using Input

- First, define a new list using the assignment operator and an empty list (using square brackets).
- 2. Use a loop to enter values into the list using **input** and **.append**.

Note the use of string concatenation (+) and string conversion (str()) to build the prompt.



3. Store and run the program. When the program is done, display the entered list in the Python shell to confirm the changes.



Combining Two Lists

Method 1: Using +

1. Two lists can be combined using the operator +. For example, if **list1** = [1,2,3] and **list2** = [4,5,6,7], the code **mylist=list1+list2** will combine **list1** and **list2** into a new list called **mylist**.

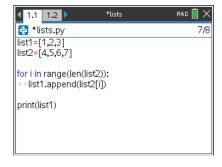
What would **mylist** be if it was defined as **mylist=list2+list1**?

Method 2: Using .append and a loop

Two lists can be combined using the .append command and a for loop. The
.append command can only add one element to the end of a list; however,
this process could be looped through to add all of the elements from the
second list to the end of the first list.

How does the code range(len(list2)) work in this program?

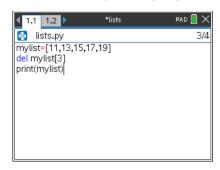
How does the code list1.append(list2[i]) work in this program?



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Removing Elements from a List

 You can use the del function to remove an element based on its index (or position in the list). del mylist[3] deletes the element currently at position 3 (the fourth element) in the list. This command will decrease the length of the list by one.



Your Turn

Write a program to *reverse* the elements in **mylist**. That is, if **mylist** contains [1, 4, 3, 2], then after running your program it will contain [2, 3, 4, 1].

Can you do it using only mylist and no other list?

Make sure it works for any (non-empty) size list, too!