

Lists, Day 1 Lab

How to get items from the keyboard into a list:

```
lst = []
num = int(input("Enter number: "))
while num != -1:    # loop stops when the user types -1
    lst.append(num)
    num = int(input("Enter number: "))
```

-----OR-----

```
lst = []
while True:
    num = int(input("Enter number: "))
    if num == -1:    # loop stops when the user types -1
        break
    lst.append(num)
```

Other ways are possible, too.

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- (1) Write a program to allow the user to input integers from the keyboard until they type -1. As each integer is entered, store them in a list.
 - (2) **After the input loop**, write a loop to calculate and print the sum of all the numbers in the list.
 - (3) **After the input loop**, write code to find & print the largest and smallest values in the list.
 - (4) Create a file with at least 10 integers in it, one per line. Call this file `numbers.txt`. Change the input loop in your code to read the integers from the file instead, rather than from the keyboard.
 - (5) **After the input loop**, write code to print out the sum of every adjacent pair of numbers in the list (don't use sliding window; use indices)
 - (6) Change the input loop so the numbers are not read from a file, but are generated at random (say, between 1 and 100). In other words, write a loop to generate 20 random numbers, each between 1 and 100, and store them in a list.
 - (7) Hard: Write a loop to find the smallest number in your list of 20 random numbers. After the loop is done, add some code to exchange that smallest number with whatever number is in position [0] in the list (effectively putting the smallest item at the front of the list). Then write a loop to find the next-smallest item in the remaining 19 numbers and move that item to position [1]. Keep repeating this idea until the list is completely sorted.