

Lesson 4: ArrayLists

Storing User Input in a List

The Joyful Pastries Food Truck owner wants cashiers to enter customer orders into a list as they are received so the baker can complete the orders from the list.

```
get totalOrders;  
new array orders[totalOrders];  
loop (totalOrder){  
    get order;  
    orders[i] = order;  
}
```

What if we don't know how many orders the owner needs to enter into the program? What would we need to change in our solution?

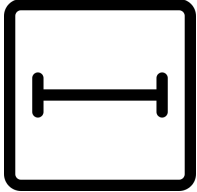
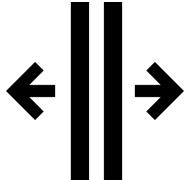
First ask how many items they are entering and using that value to initialize the array. Since the size of 1D and 2D arrays cannot change after initialization, we need to get the number of items from the user first.

Video Notes: The ArrayList Class

Follow along with the video and use the table below to create an `ArrayList`. Annotate it as you watch.

```
ArrayList<Integer> myList = new ArrayList<Integer>();
```

Object	Object	Object	Object						
--------	--------	--------	--------	--	--	--	--	--	--

Term	Definition	Example / Picture / Code
static data structure	a data structure that is fixed in size	
dynamic data structure	a data structure that grows and shrinks as needed	
mutable	the ability to change after initialization	ArrayList

ArrayList
Parameters: DEFAULT_CAPACITY size data
Methods: add() size()

Reflection

Question of the Day: Why would I use an `ArrayList` instead of an array?

when we are working with an unknown amount of data or we need the flexibility to add elements at specific locations or expand the size of the list

What are two big ideas about `ArrayLists` that you think will appear again in our lesson next class?

Maybe we will learn how to subtract elements from `ArrayLists`, or perhaps we will learn how to traverse `ArrayLists`.