

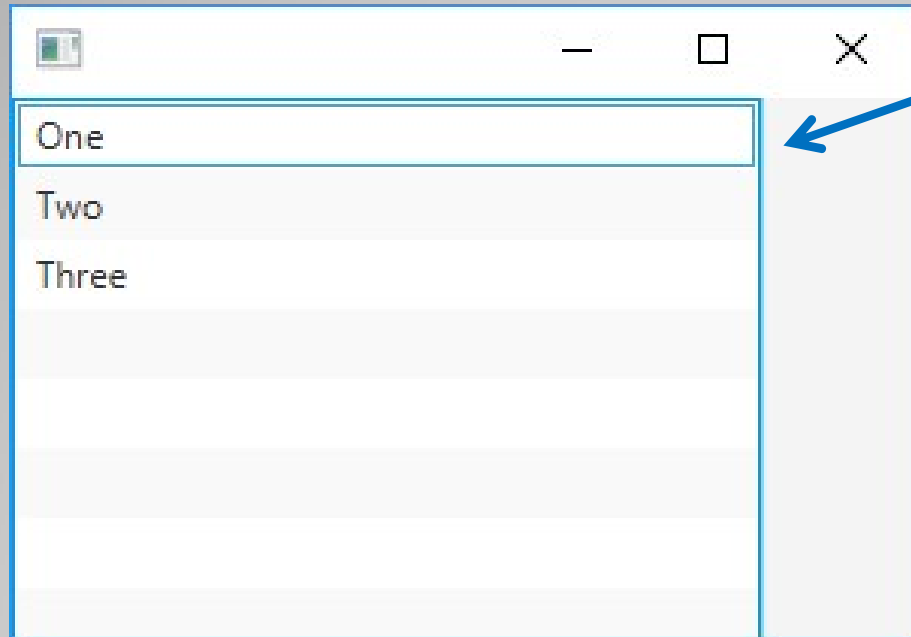
# Java Programming

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- JavaFX
- Various control descriptions
  - ListView

# Today's Lecture

- Display a collection of data.
- Users can select item(s).



**ListView**

**In Scene Builder you  
can drag and drop a  
ListView control on  
to the window**

**ListView**

# ListView

- Component used to display data.
- Does not inherently hold data itself.
- Uses another class to actually hold its data.

ListView

Does not hold data on  
its own

**ListView**

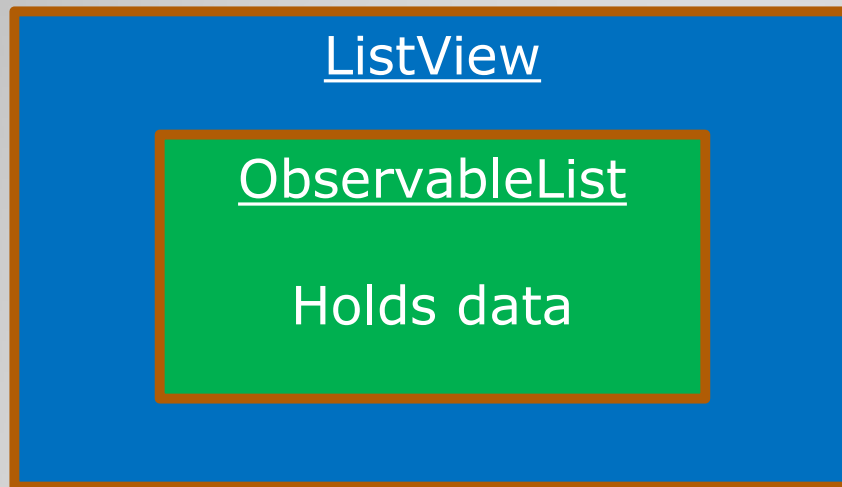
# ObservableList

- Used by ListView to store data.
- Just a collection of data.
- Does not display data on its own (it is a member of the ListView class).



# ObservableList

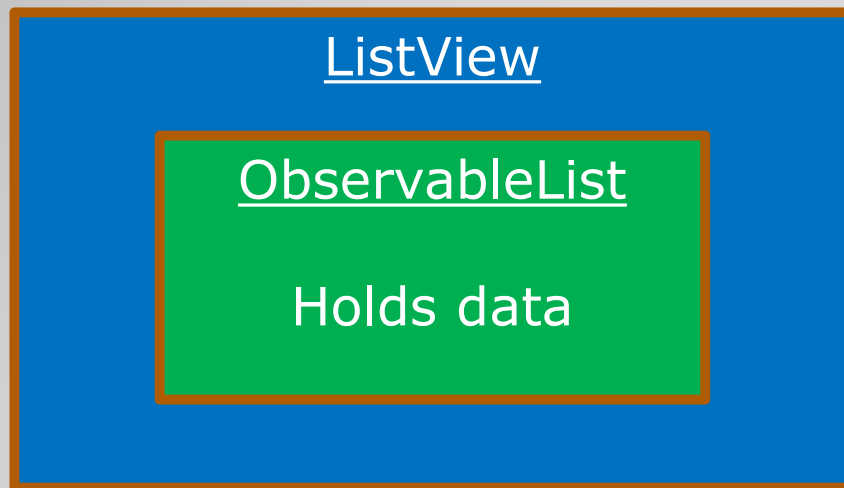
- ListView needs to be associated with an ObservableList.
- The ObservableList will hold the data for the ListView.
- ListView "has an" ObservableList (aggregation relationship).



**How do we  
associate a  
ObservableList  
with a ListView?**

**ListView "has a" ObservableList**

- There is an Items member inside of the ListView.
- This Items member stores data that the ListView displays.
- For example:



**The  
ObservableList  
has the  
ListView's data**

**ListView "has an" ObservableList**

- You must add data to the ListView's background collection to have it displayed in the ListView.
- First, get the background item collection from the ListView (an ObservableList).
- Second, add data to the background item collection.

@FXML


private ListView lv;

Must have a ListView member  
variable that is associated with  
the ListView in the FXML file



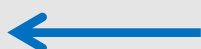
ObservableList<String> items = lv.getItems();

The getItems method  
will return the  
ListView's  
background item  
collection



items.add("I love Java");

Add the string  
"I love Java" to  
the ListView  
background  
item collection



## Add Data to a ListView in Code



- Handle ListView Item Selection (controller code)

@FXML

```
private ListView<String> listViewItems; ← ListView FXML Id
```

@FXML

```
protected void handleListViewItemsMouseClicked(MouseEvent event) {
```

```
    ObservableList<String> observableList =
```

```
        (ObservableList<String>) listViewItems.getItems();
```

Get the background collection

Get the selected item index

```
    int selectedIndex = listViewItems.getSelectionModel().getSelectedIndex();
```

Get the selected item from the collection

```
    if (selectedIndex >= 0 && selectedIndex < observableList.size()) {
```

```
        System.out.println("Selected Item: " + observableList.get(selectedIndex));
```

```
    }
```

```
}
```

## ListView Selected Item

- Handle ListView Item Selection (FXML code)

FXML Id



ListView selection  
event handler  
method



```
<ListView fx:id="listViewItems" onMouseClicked="#handleListViewItemsMouseClick">  
</ListView>
```

## ListView Selected Item

**End of Slides**