

# UnitConverter

## Lesson 1



### Description

Use Interface Builder to create the user interface with a label and picker view.

### Learning Outcomes

- Predict the amount of user activity based on the choice of user interface components, and compare different mechanisms of user input.
- Apply Interface Builder to create a user interface.
- Practice using Auto Layout constraints to create adaptable user interfaces.
- Recognize the picker view interface component and plan user interaction with the interface.



### Vocabulary

user experience	usability	Interface Builder
IB Object Library	Attributes Inspector	constratin
Pin control	Align control	Picker View
Assistant Editor		

### Materials

- **UnitConverter Lesson 1** Xcode project

## Opening

The user of our app needs to provide a temperature. How many taps would be involved if our interface consisted of a text field for input?

## Agenda

- Discuss the main requirement of the application: for the user to input a temperature in Celsius, and to convert the value to a temperature in Fahrenheit.
- Discuss the number of taps that would be necessary if the interface consisted of a text field and button, including tapping the field, typing a number, and tapping a button to execute the temperature value conversion.
- Discuss the improved user experience of flicking a picker element and converting the temperature value when a temperature is selected.
- Using Interface Builder and the Object Library (⌘L), add a text label for the converted temperature.
- Use the Attributes Inspector (⌘4) to adjust the label size and typeface.
- Use upward Control-dragging to set the label's top spacing, the Align control (⌘) to center it horizontally, and the Resolve Auto Layout Issues control (⌘A) to update the frame(⌘=).
- Using Interface Builder and the Object Library (⌘L), add a Picker View to the bottom of the interface.
- Use downward Control-dragging to set the Picker View bottom spacing, the Align control (⌘) to center it horizontally, and the Resolve Auto Layout Issues control (⌘A) to update the frame(⌘=).
- Use the Assistant Editor (⌘⇧) Preview to observe the interface on different devices and orientations.
- Discuss the positioning of the picker view, and how placing it at the bottom of the interface relates to how the user might use the app running on a device in the hand.
- Run the app (⌘R) and attempt to use the picker.

## Closing

Why do you think the picker was unpopulated with the California city names when you ran the app?

## Modifications and Extensions

- Create the temperature label with code inside the controller `viewDidLoad` method, and critique the benefits and drawbacks of creating the interface procedurally.

## Resources

Xcode Overview: Build a User Interface [https://developer.apple.com/library/ios/documentation/ToolsLanguages/Conceptual/Xcode\\_Overview/edit\\_user\\_interface.html](https://developer.apple.com/library/ios/documentation/ToolsLanguages/Conceptual/Xcode_Overview/edit_user_interface.html)

Interface Builder Object and Media Help: Adding an Object to Your Interface [https://developer.apple.com/library/ios/recipes/xcode\\_help-IB\\_objects\\_media/Chapters/AddingObject.html](https://developer.apple.com/library/ios/recipes/xcode_help-IB_objects_media/Chapters/AddingObject.html)

Auto Layout Guide: Working with Constraints in Interface Builder <https://developer.apple.com/library/ios/documentation/UserExperience/Conceptual/AutolayoutPG/WorkingwithConstraints/WorkingwithConstraints.html>