

Intro to Auto Layout

Hands On Challenges

Introduction to Auto Layout Hands-On Challenges

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Challenge E: Intrinsic Content Size

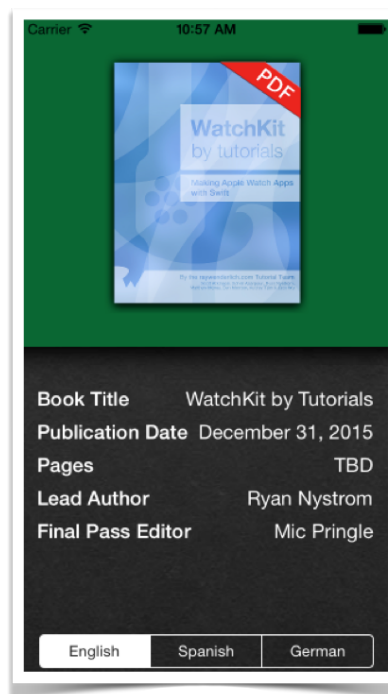
Intrinsic Content Size is probably the biggest area of confusion when it comes to Auto Layout, although people may not know it. Throughout this series, I've stressed over and over that Auto Layout simply requires an **x position**, a **y position**, and a **width**, and a **height**.

There are times when you think you are providing such information but yet Auto Layout is still painting Interface Builder with bright orange lines.

Remember, the red dotted outlines in Interface Builder are your friends. These tell you where Auto Layout thinks a view will be placed versus where you actually have it set.

Well, you may be dealing with controls who believe they are either larger or smaller than the constraints you have set up based on their content. In such cases, you may have to add external constraints to maintain that size. Or you may have to add constraints in such a way to override a view's intrinsic content size.

Here's what you'll build:



A few notes about building this interface. There's going to be interactivity involved with it. Every thing has been coded for you in **ViewController.swift**.

Once you have the interface built out, hook up all the outlets as well as the action to the SegementedControl.

Your content should adjust to various different languages without breaking the layout or the text being unreadable.

Note: A layout like this is sometimes difficult to get working in both portrait and landscape. That's one thing adaptive layout helps solve. Since we're not covering adaptive layout in this series, you'll only build this interface to work in the portrait orientation.



Challenge Hint

Remember when working with working with labels that grow too big, you will need to adjust the content hugging and content compression resistance priorities. Also, you can have labels shrink the font size when the content grows too large.



Challenge Solution

- 1) Drag a UIView on to the interface and in the size inspector, set the **width** to **600** and the **height** to be **300**. Set **x** to be **0**, and **y** to be **0**. In the Attributes Inspector, set the **background color** to be **green**.
- 2) Drag another UIView on to the interface in the size inspector, set the **width** to **600** and the **height** to be **300**. Set the **x** to be **0** and **y** to be **300**. In the Attributes Inspector, set the **background color** to be **black**.
- 3) Select the top view, and press the pin button. Uncheck **Constrain to Margins**. Select all four I-beams, pinning the view to the **top**, **right**, **bottom**, and **left**. Add the constraints.
- 4) Control drag between the top view and the superview and select **Equal Heights**. Edit the newly created constraint and set the **multiplier** to **0.5**.
- 5) Select the bottom view, and press the pin button. Uncheck **Constrain to Margins**. Select the **left**, **right**, and **bottom I-beams**. Add the constraints.
- 6) Drag a UIImageView into the top view. Set the following values in the Size Inspector. Set the **width** to **584** and the **height** to be **242**. Set the **x** to **8** and the **y** to be **29**.
- 7) In the attributes inspector, set the image to **WatchKit-cover_640** and the **Mode** to **Aspect Fit**.
- 8) Select the UIImageView and press the pin button. Select all four I-beams, pinning the **top**, **right**, **bottom**, and **left**, then add the constraints.
- 9) Drag a UIImageView into the bottom view and size it to the full size of the bottom view. In the attributes inspector, set the image to **footer-background-min**.
- 10) With the image view still selected, press the pin button. Add **top**, **right**, **bottom**, and **left** constraints.
- 11) Add a Label to the bottom view and give it the name "Book Title:" and set **x** to be **14** and **y** to be **35**.
- 12) Add a Label to the bottom view and give it the name "Publication Date:" and set **x** to be **14** and **y** to be **64**.
- 13) Add a Label to the bottom view and give it the name "Pages:" and set **x** to be **14** and **y** to be **93**.



- 14) Add a Label to the bottom view and give it the name "Lead Author:" and set **x** to be **14** and **y** to be **122**.
- 15) Add a Label to the bottom view and give it the name "Final Pass Editor:" and set **x** to be **14** and **y** to be **151**.
- 16) Add a Label to the bottom view and give it the name "WatchKit by Tutorials" and set **x** to be **422** and **y** to be **35**.
- 17) Add a Label to the bottom view and give it the name "December 31, 2015" and set **x** to be **435** and **y** to be **64**.
- 18) Add a Label to the bottom view and give it the name "TBD" and set **x** to be **550** and **y** to be **93**.
- 19) Add a Label to the bottom view and give it the name "Ryan Nystrom" and set **x** to be **476** and **y** to be **122**.
- 20) Add a Label to the bottom view and give it the name "Mic Pringle" and set **x** to be **499** and **y** to be **151**.
- 21) Add a Segmented Control to the bottom view and give it the name values "English", "Spanish", and "German". Set the **Tint** color to **white**. Set **x** to be **16** and **y** to be **264**. Set the width to be **568**.
- 22) Select the following labels: **Book Title**, **Publication Date**, **Pages**, **Lead Author**, **Final Pass Editor**. Select the Pin button and check the **Constrain to margins** checkbox. Set constraints for the **top** and **bottom** and **Align Leading Edges**. Delete the bottom constraint on the **Final Pass Editor** label. Delete the constraint between the **Publication Date** label and **WatchKit by Tutorials** label.
- 23) Pin the **leading space** for the **Book Title** label to its superview.

Note: If you control drag from the label, you'll probably have a hard time picking the superview, rather than the background image. If you control drag from the label to the superview in the document outline, use **option** to change the constraint to be relative to the superview margin.

- 24) Select the following labels: **WatchKit by Tutorials**, **December 31, 2015**, **TBD**, **Ryan Nystrom**, **Mic Pringle**. Select the Pin button and Pin the **left** and **Align Trailing Edges**. Select all the leading constraints and change the **Relation** to **Greater Than or Equal** and change the **Constant** to **Use Standard Value**.
- 25) Create a **Trailing Space** constraint between the **WatchKit by Tutorials** label and its superview's margin.
- 26) Create a **Baseline** constraint between each pair of labels (like **Book Title** and **WatchKit by Tutorials**)



27) Select the following labels: **Book Title, Publication Date, Pages, Lead Author, Final Pass Editor** and in the Size Inspector, set the **Content Compression Resistance Priority** for **Horizontal** to **749**. In the Attributes Inspector, set the **Autoshrink** to **Minimum Font Scale**.

28) Select the Segmented Control and pin the **left, bottom, and right** to the superview margins

23) Connect the Segmented Control to `updateLangague()`.

24) Connect the "**Book Title**" label to `bookTitleLabel`.

25) Connect the "**Publication Date**" label to `publicationDateLabel`.

26) Connect the "**Pages**" label to `pagesLabel`.

27) Connect the "**Lead Author**" label to `leadAuthorLabel`.

28) Connect the "**Final Pass Editor**" label to `finalPassEditorLabel`.

