

Layout transitions

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Agenda

- 'In place' transitions
 - same controller and collection view
- Between controllers (navigation stack)
 - automatic
 - interactive

`In place` transitions

- Single view controller
- Different representation
- Non-interactive, animated
- `setLayout:animated:completion` - automatic transition

`In place` transitions

- More fine-grained control (hidden in UICollectionViewLayout.h):

```
// This set of methods is called when the collection view undergoes an animated transition such as a
batch update block or an animated bounds change.
// For each element on screen before the invalidation, finalLayoutAttributesForDisappearingXXX will be
called and an animation setup from what is on screen to those final attributes.
// For each element on screen after the invalidation, initialLayoutAttributesForAppearingXXX will be
called an an animation setup from those initial attributes to what ends up on screen.
```

```
- (UICollectionViewLayoutAttributes *)initialLayoutAttributesForAppearingItemAtIndexPath:(NSIndexPath
*)indexPath;
- (UICollectionViewLayoutAttributes *)finalLayoutAttributesForDisappearingItemAtIndexPath:(NSIndexPath
*)indexPath;
- (UICollectionViewLayoutAttributes *)initialLayoutAttributesForAppearingSupplementaryElementOfKind:
(NSString *)elementKind atIndexPath:(NSIndexPath *)elementIndexPath;
- (UICollectionViewLayoutAttributes *)finalLayoutAttributesForDisappearingSupplementaryElementOfKind:
(NSString *)elementKind atIndexPath:(NSIndexPath *)elementIndexPath;
- (UICollectionViewLayoutAttributes *)initialLayoutAttributesForAppearingDecorationElementOfKind:
(NSString *)elementKind atIndexPath:(NSIndexPath *)decorationIndexPath;
- (UICollectionViewLayoutAttributes *)finalLayoutAttributesForDisappearingDecorationElementOfKind:
(NSString *)elementKind atIndexPath:(NSIndexPath *)decorationIndexPath;
```


Demo

Between Controllers

- Make use of UINavigationController's: `useLayoutToLayoutNavigationTransitions`
 - automatic interpolation between layouts
 - presented controller is shallow: data source and delegate set to previous
 - collection view passed between controllers
 - edge swipe - interactive transition out of the box

Demo

Interactive transition

- From iOS 6 UIViewController new transitioning APIs:
 - UIViewControllerAnimatedTransitioning
 - UIViewControllerInteractiveTransitioning
 - UINavigationControllerDelegate (added transition methods) - to customise push/pop
 - UIViewControllerTransitioningDelegate - hooks to customise present/dismiss

New UICollectionView APIs

- From iOS 7 new APIs for collection view to support custom transitions:
 - `startInteractiveTransitionToCollectionViewLayout:t:completion:`
 - `finishInteractiveTransition`
 - `cancelInteractiveTransition`
 - `UICollectionViewTransitionLayout`

Demo

Recap

- Interactive transitions + gesture recognisers
- Set `useLayoutToLayoutNavigationTransitions`
- For interactive transition return transition animator and interaction controller
- Drive interaction by updating transition context and transition layout
- Make sure to clean-up transition state (end or cancel)

Materials

- WWDC 2013, Session 218: Custom Transitions Using View Controllers
- objc.io: View Controller Transitions, Issue #5 iOS 7, October 2013
- “Custom UIViewController Transitions” - Ash Furrow (teeahanlax.com/blog)

Thanks!