Layout Transitions

Aleksander Zubala

@alekzubala

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Transitions

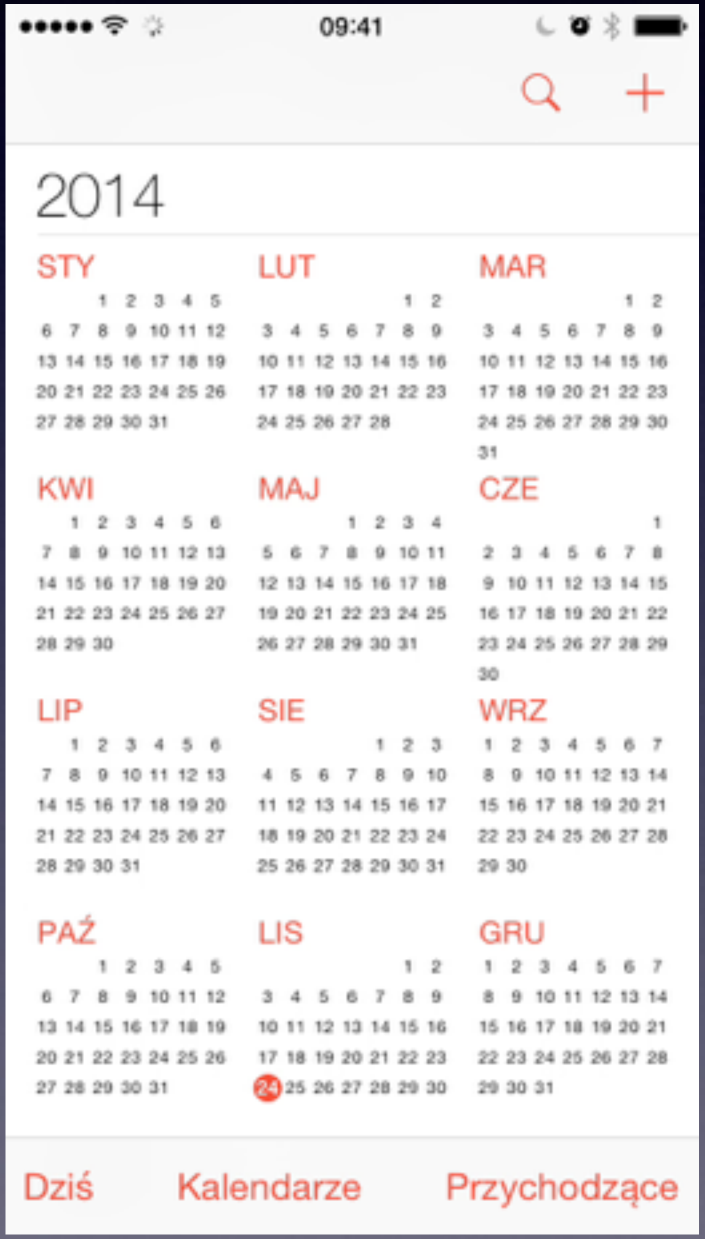
Why bother, anyway?

- Change the context (push, modal)
- Change presentation (details)
- Show off :) (Paper)

What’s good transition?

- not slow, not fast - **timing**
- subtle, balanced between flashy and practical - **appeal**
- presenting main idea clearly - **staging**

Examples


09:41
2014
STY
1 2 3 4 5
6 7 8 9 10 11 12
13 14 15 16 17 18 19
20 21 22 23 24 25 26
27 28 29 30 31
LUT
1 2
3 4 5 6 7 8 9
10 11 12 13 14 15 16
17 18 19 20 21 22 23
24 25 26 27 28
MAR
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10 11 12 13 14 15 16
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24 25 26 27 28 29 30
31
KWI
1 2 3 4 5 6
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14 15 16 17 18 19 20
21 22 23 24 25 26 27
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MAJ
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CZE
1
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9 10 11 12 13 14 15
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LIP
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SIE
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18 19 20 21 22 23 24
25 26 27 28 29 30 31
WRZ
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8 9 10 11 12 13 14
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PAŹ
1 2 3 4 5
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20 21 22 23 24 25 26
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LIS
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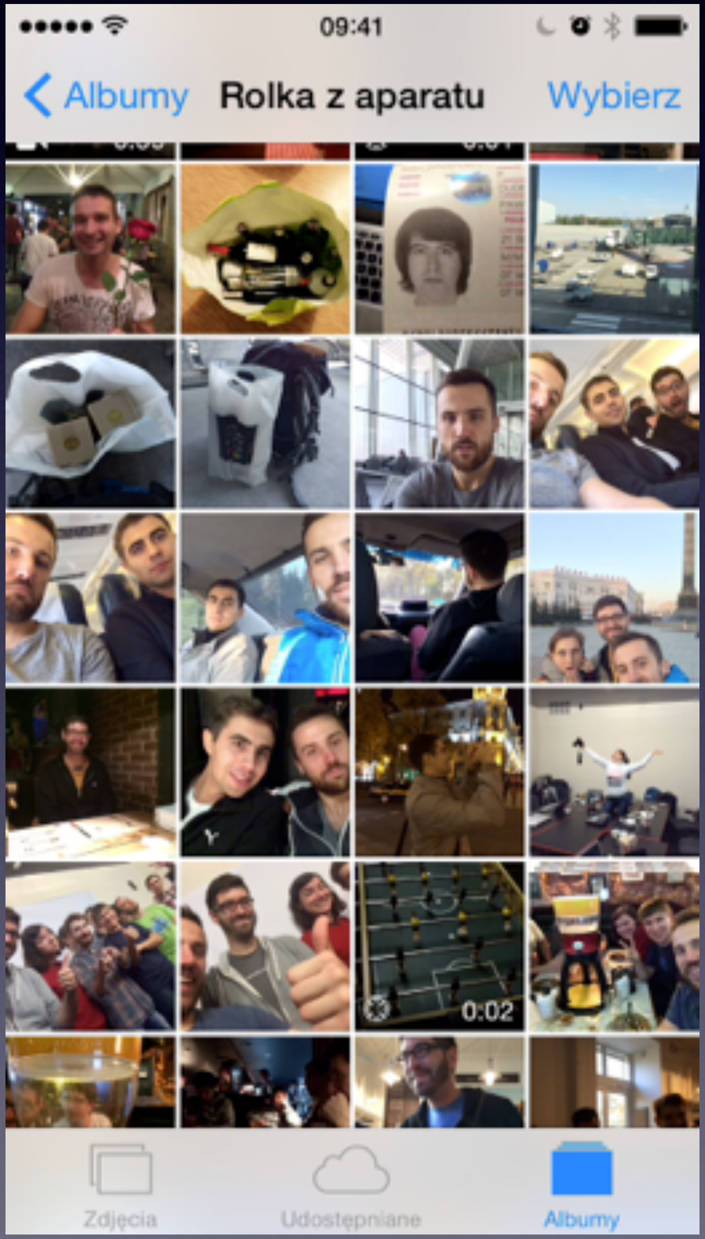
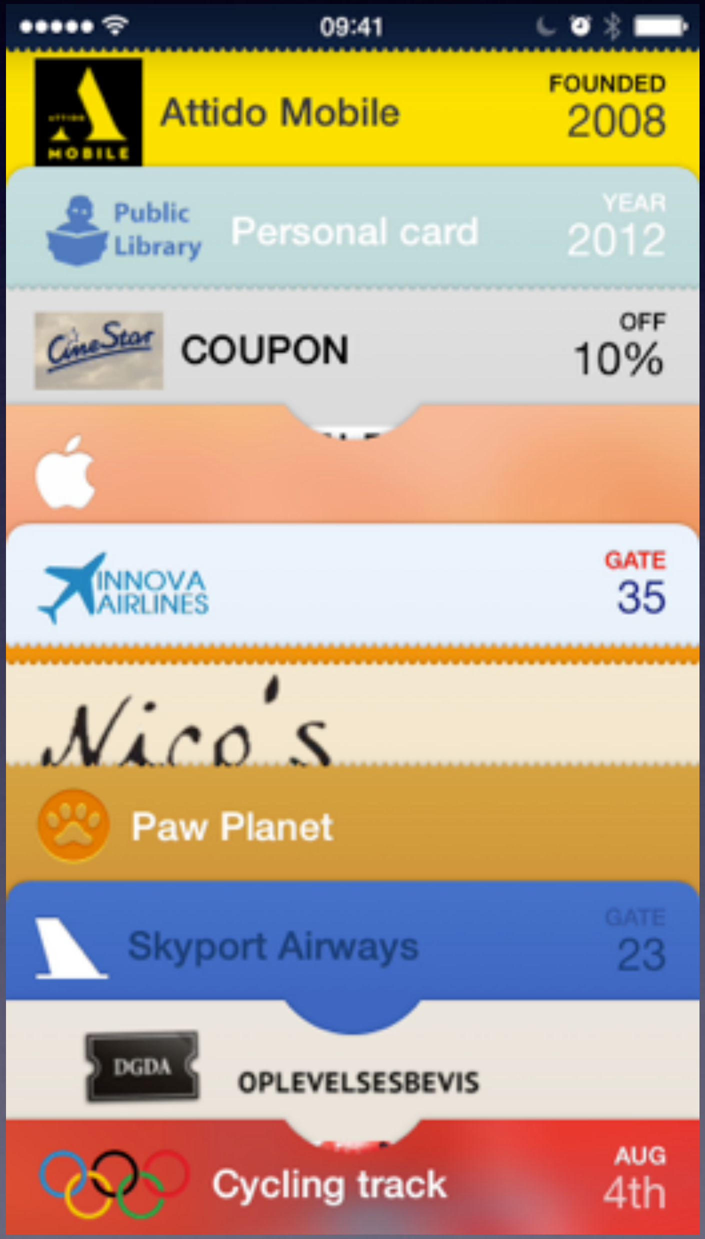
10 11 12 13 14 15 16
17 18 19 20 21 22 23
24 25 26 27 28 29 30
GRU
1 2 3 4 5 6 7
8 9 10 11 12 13 14
15 16 17 18 19 20 21
22 23 24 25 26 27 28
29 30 31
Dziś
Kalendarze
Przychodzące


09:41
Albumy
Rolka z aparatu
Wybierz
0:02
Zdjęcia
Udostępniane
Albumy


09:41
Attido Mobile
FOUNDED
2008
Public Library
Personal card
YEAR
2012
CineStar
COUPON
OFF
10%
INNOVA AIRLINES
GATE
35
Nico's
Paw Planet
Skyport Airways
GATE
23
DGDA
OPLEVELSESBEVIS
Cycling track
AUG
4th

Automatic

- transition between layouts that can be interpolated
- change layout on collection view with `setLayout:animated:completion`
- non-interactive
- no control over the timing
- ??

Automatic

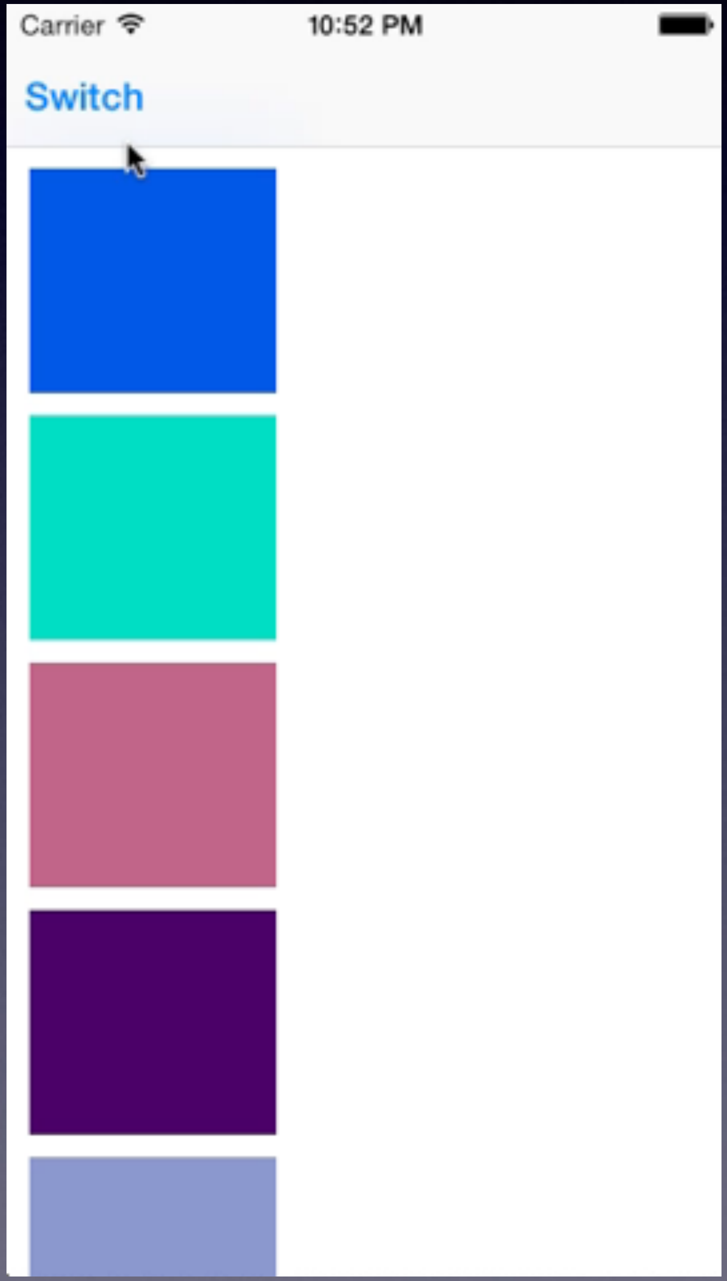
- How about we use this info? (`UICollectionViewLayout.h`):

```
// 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.
```

Task 1: Final/Initial

- Folder named `AttributesDemo`
- Key classes:
  - `CollectionViewController`
  - `LeftLayout`
  - `RightLayout`
- Automatic transition (as expected) produces interpolation between left and right layout

Task 1: Final/Initial



TODOs:

- In `LeftLayout` adjust layout attributes in initial/final methods so items are pushed outside the screen to the left
- The same goes for `RightLayout`, but push items outside the screen to the right
- `git checkout lt-task-1`

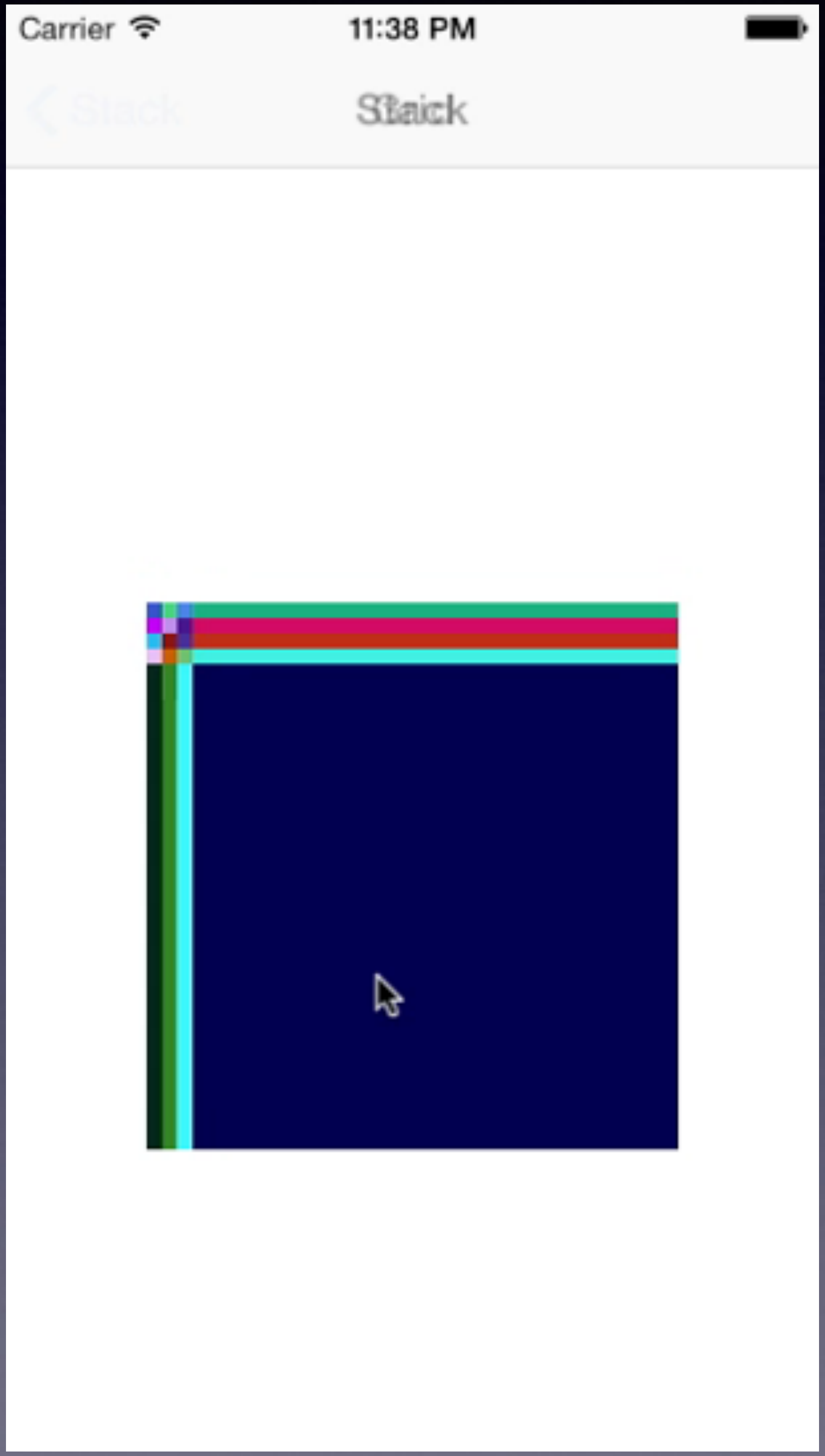
Layout to Layout

- Property on `UICollectionViewController` called `useLayoutToLayoutNavigationTransitions`
- Transition using navigation controller
- Collection view controller as the root object
- Perform transition by setting property to `YES` on controller which will be pushed
- Interactive for free!

Task 2: Layout to Layout

- Folder named `LayoutToLayout`
- Key classes:
  - `GridLayout`
  - `GridViewController`
  - `StackLayout`
  - `StackViewController`

Task 2: Layout to Layout



TODO:

- Push `GridViewController` when cell is pressed on StackViewController
- Make sure to set `useLayoutToLayoutNavigationTransitions` to `YES` on `GridViewController` before pushing onto stack
- `git checkout lt-task-2`

Task 2: Layout to Layout

- Easy but automatic transition
- Interactive for free
- Presented controller is ‘shallow’
  - No delegate
  - No data source
  - Shared collection view

Automatic is boring

- So far all transitions automatic
- How about custom stuff?
- Interactive is the new black
- New API from iOS 7 in `UICollectionView`

```
startInteractiveTransitionToCollectionViewLayout:completion:
```

Interactive Transition

- Change the layout using an intermediate transition
- Need to setup gesture or other touch-event handling code
- Update `transitionProgress`
- To finish: `finishInteractiveTransition`
- To cancel: `cancelInteractiveTransition`

Looks familiar?

- `UIViewControllerAnimatedTransitioning`
- `UIViewControllerInteractiveTransitioning`
- `UIViewControllerContextTransitioning:`
  - `updateInteractiveTransition:`
  - `finishInteractiveTransition`
  - `cancelInteractiveTransition`

Interactive Transition

- `UICollectionViewTransitionLayout` class by default
- Custom transition object instead, implement the

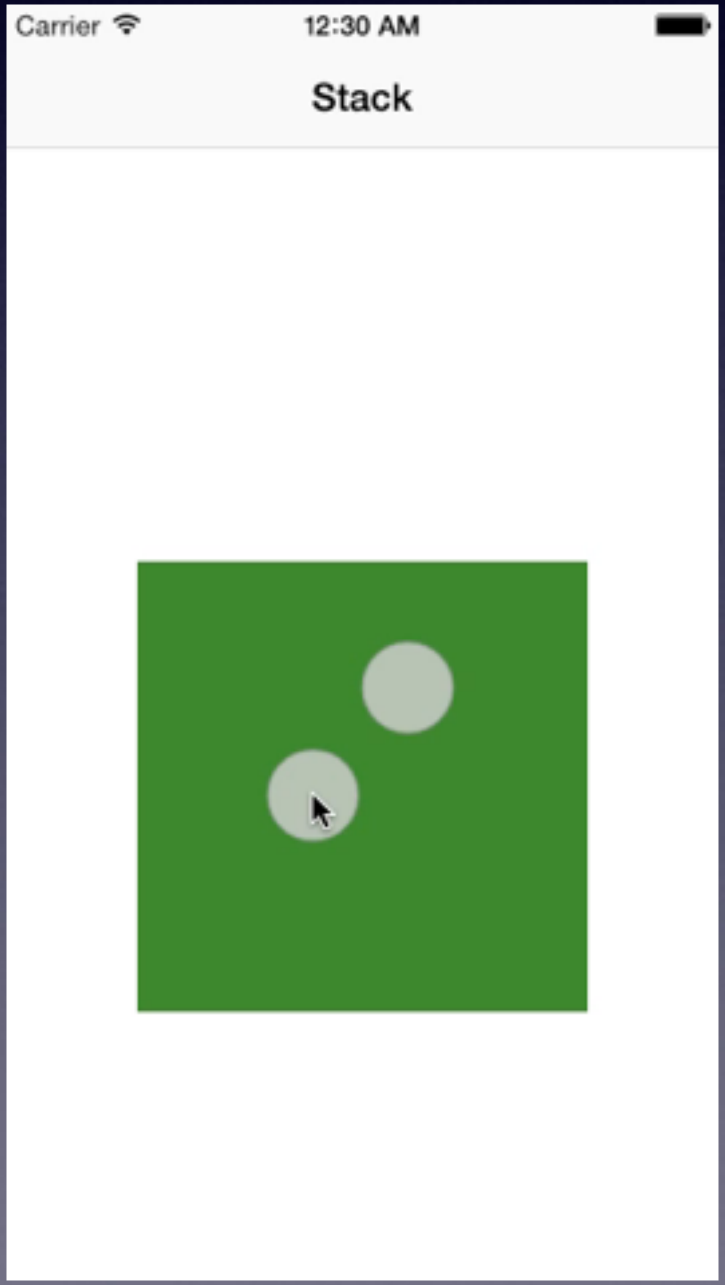
  `collectionView:transitionLayoutForOldLayout:newLayout:`

Task 3: Custom Interactive Transition

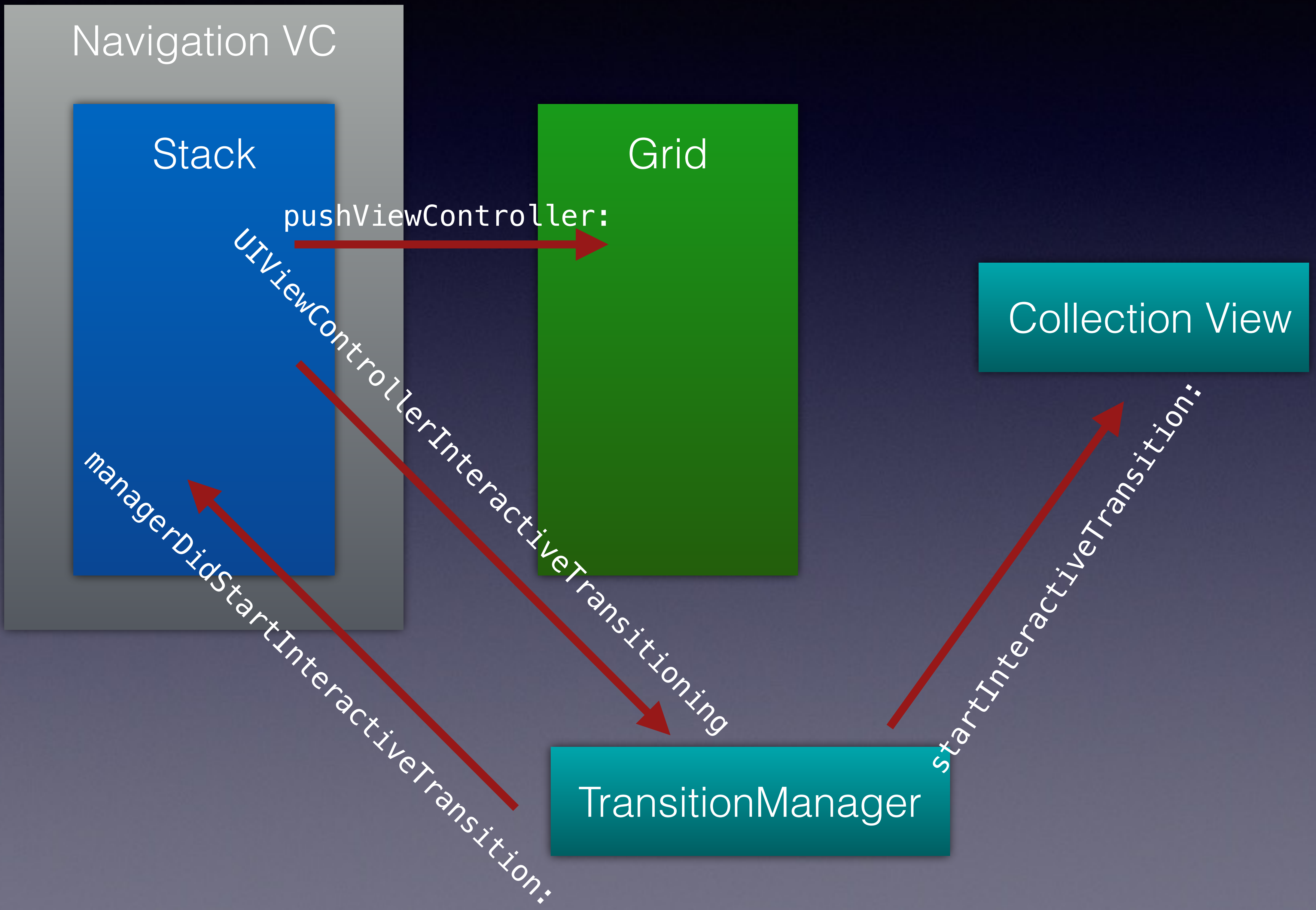
- Folder named `LayoutToLayout`
- Checkout branch: `lt-task-3`
- Key classes:
  - `TransitionLayout`
  - `TransitionManager`

Task 3: Custom Interactive Transition

- Implement the transition:



Task 3: Overview


Navigation VC
Stack
Grid
Collection View
TransitionManager
pushViewController:
UIViewControllerInteractiveTransitioning
managerDidStartInteractiveTransition:
startInteractiveTransition:

Task 3.1: Custom Interactive Transition

- Create `TransitionManager` and register `UICollectionView`
- Set `delegate` of `TransitionManager`
- Conform `UINavigationControllerDelegate`
- Register `UIPinchGestureRecognizer`
- `git checkout origin/lt-task-3.1`

Task 3.2: Custom Interactive Transition

- Implement pinch callback:
  - Began -> inform delegate
  - Changed -> update progress, invalidate layout
  - Ended -> finished
  - Cancelled -> cancelled
  - `git checkout origin/lt-task-3.2`

Task 3.3: Custom Interactive Transition

- Implement `startInteractiveTransition:`
  - save transition context
  - add view of presented view controller
  - start interactive transition - save layout
  - clean up on completion block
- Make use of `TransitionLayout`
- `git checkout origin/lt-task-3.3`

Good Reads

- 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 (teehanlax.com/blog)
- UIKonf 2014 - Eric Allam: Building better transitions

Thanks!