Collection Views
A Collection View manages an ordered collection of data items and presents them using customizable layouts.

They provide the same general function as Table Views, except that a collection view is able to support more than just single-column layouts.

- multi-column grids
- tiled layouts
- circular layouts
- etc.
Collection Views

- Like table views, a collection view:
  - Is a subclass of `UIScrollView`
  - Has a controller class – `UICollectionViewController`
  - Has a delegate – `UICollectionViewDelegate`
  - Has a data source – `UICollectionViewDataSource`
  - Has reusable cells – `UICollectionViewCell`
  - Has headers and footers called `Supplementary Views`

- Unlike table views, a collection view offers a way to lay out its cells
  - This is done by an optional `UICollectionViewLayout` object
Collection Views

- **UICollectionViewLayout**
  - is responsible for the size, position and other attributes of the content
  - can position its elements wherever it likes

- Two pre-defined types:
  - **UICollectionViewFlowLayout**: organizes cells into a grid
  - **UICollectionViewTransitionLayout**: lets you implement behaviors when changing from one layout to another in your collection view
Collection Views

Key methods:

- `numberOfSectionsInCollectionView`
- `numberOfItemsInSection`
- `cellForItemAtIndexPath`  
  - *Where you create a cell and set its data*
- `sizeForItemAtIndexPath`
Collection Views

You can set the scroll direction as vertical (the default) or horizontal, either in IB or programmatically: