CS47: Cross-Platform Mobile Development

Lecture 3B: Exercise on Interactive Components

James Landay
Abdallah AbuHashem
Tiffany Manuel
Cisco Vlahakis
Vy Mai

https://cs-47.stanford.edu

cs-47.slack.com

Fall 2019

Live Exercise

To-Do List

STARTER CODE

1) Run `npm install`
2) Open with Expo

Live Exercise

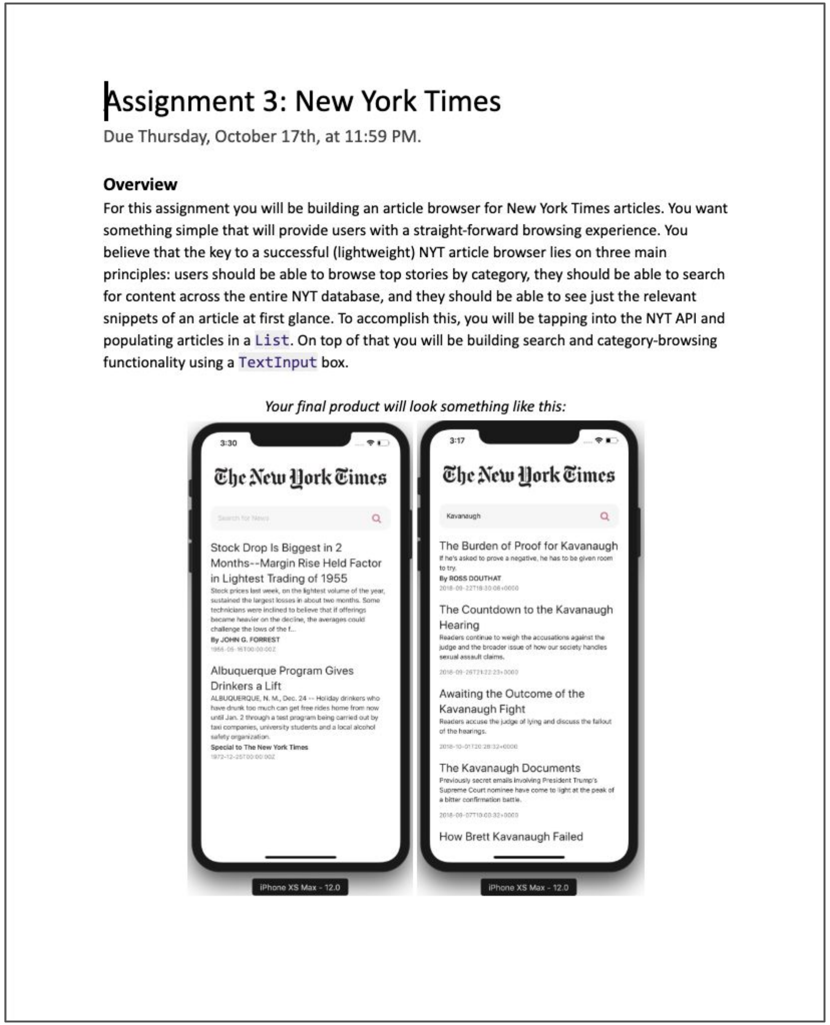
To-Do List

STARTER CODE

1) Run `npm install`
2) Open with Expo

OR

1) Run `git stash`
2) Run `git pull`
3) Open with Expo



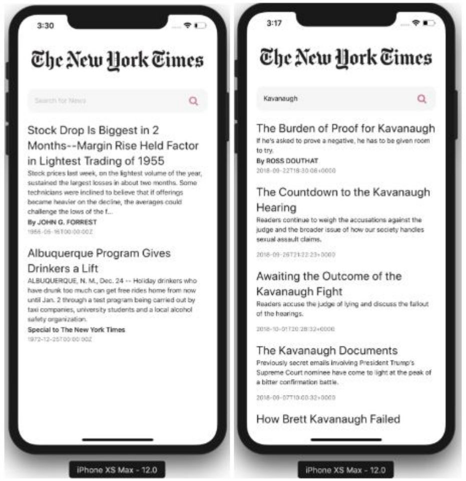
Assignment 3: New York Times

Due Thursday, October 17th, at 11:59 PM.

Overview

For this assignment you will be building an article browser for New York Times articles. You want something simple that will provide users with a straight-forward browsing experience. You believe that the key to a successful (lightweight) NYT article browser lies on three main principles: users should be able to browse top stories by category, they should be able to search for content across the entire NYT database, and they should be able to see just the relevant snippets of an article at first glance. To accomplish this, you will be tapping into the NYT API and populating articles in a `List`. On top of that you will be building search and category-browsing functionality using a `TextInput` box.

Your final product will look something like this:



Stock Drop Is Biggest in 2 Months--Margin Rise Held Factor in Lightest Trading of 1955

Stock prices last week, on the lightest volume of the year, sustained the largest losses in about two months. Some technicians were inclined to believe that if offerings became heavier on the decline, the averages could challenge the lows of the f...

By JOHN G. FORREST

1956-05-16T00:00:00Z

Albuquerque Program Gives Drinkers a Lift

ALBUQUERQUE, N. M., Dec. 24 -- Holiday drinkers who have drunk too much can get free rides home from now until Jan. 2 through a test program being carried out by taxi companies, university students and a local alcohol safety organization.

Special to The New York Times

1972-12-25T00:00:00Z

The Burden of Proof for Kavanaugh

If he's asked to prove a negative, he has to be given room to try.

By ROSS DOUTHAT

2018-09-22T18:30:08+0000

The Countdown to the Kavanaugh Hearing

Readers continue to weigh the accusations against the judge and the broader issue of how our society handles sexual assault claims.

2018-09-26T21:22:23+0000

Awaiting the Outcome of the Kavanaugh Fight

Readers accuse the judge of lying and discuss the fallout of the hearings.

2018-10-01T20:28:32+0000

The Kavanaugh Documents

Previously secret emails involving President Trump's Supreme Court nominee have come to light at the peak of a bitter confirmation battle.

2018-09-07T10:00:32+0000

How Brett Kavanaugh Failed

Due Thursday, October 17th

Overview for today

- Quick recap
- Exercise
  - ToDo list app to use TextInput, FlatList and Functional Components

TextInput

- Allows for the intake of text by the user
- Two important props
  - *onChangeText* listens to keystrokes
  - *value* displays the text itself
- Additional props
  - *placeholder* is text shown when nothing is typed
- Snack: https://snack.expo.io/BJNX1__xZ

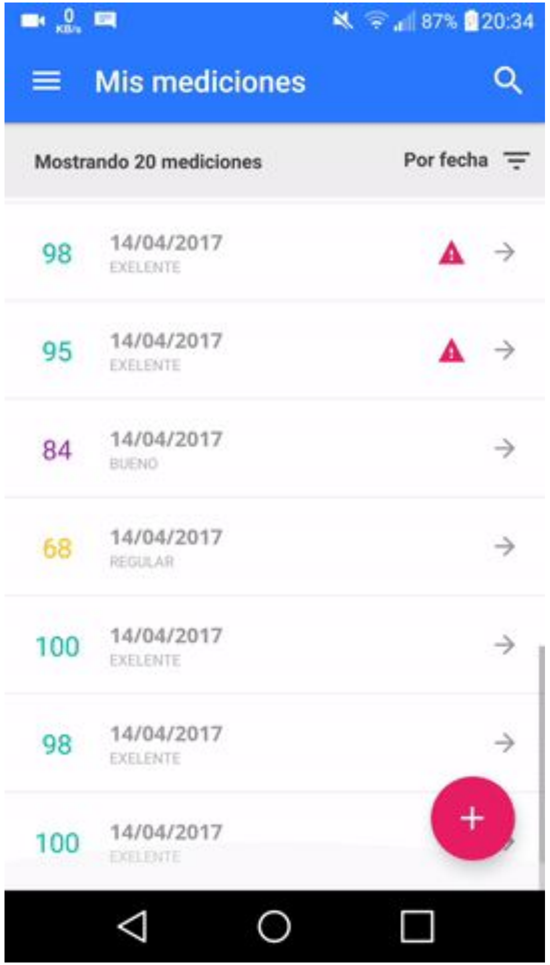
```
import React, { Component } from 'react';
import { TextInput } from 'react-native';

export default function UselessTextInput() {
  const [value, onChangeText] = React.useState('Useless
Placeholder');

  return (
    <TextInput
      style={{ height: 40, borderColor: 'gray',
borderWidth: 1 }}
      onChangeText={text => onChangeText(text)}
      value={value}
    />
  );
}
```

FlatList

- Allows for the display of a list with scrolling built in
- Three important props
  - *data, what do you want to show?*
  - *renderItem* renders an item in the flatlist
    - This is where you specify the UI layout of each item in data
  - *keyExtractor* returns a unique key for every item
    - Common cause of YellowBox warnings is to incorrectly assign keys
- Snack: https://snack.expo.io/@bacon/flatlist



Mis mediciones

Mostrando 20 mediciones — Por fecha

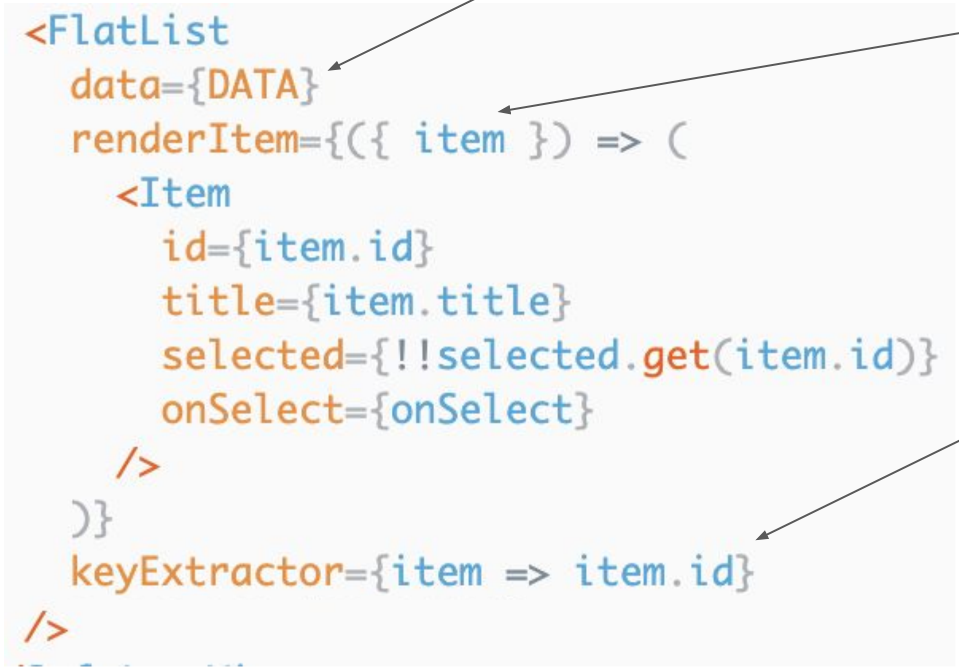
98	14/04/2017	EXELENTE
95	14/04/2017	EXELENTE
84	14/04/2017	BUENO
68	14/04/2017	REGULAR
100	14/04/2017	EXELENTE
98	14/04/2017	EXELENTE
100	14/04/2017	EXELENTE

FlatList

Array of objects

Returns an object that represents an instance of the data array

Extracts which field should be read as the key, usually an id



```
<FlatList
  data={DATA}
  renderItem={({ item }) => (
    <Item
      id={item.id}
      title={item.title}
      selected={!!selected.get(item.id)}
      onSelect={onSelect}
    />
  )}
  keyExtractor={item => item.id}
/>
```

Follow new code

https://reflect.sh/finicky-knee

Live Exercise

To-Do List

Complete parts 1 & 2

Demo Step 3

Remember functional components

Functional Component

A `Component` that is declared like a JS function.

```
const App = () => {
    return (
        <View style={styles.container}>
            <Text>Hello World!</Text>
        </View>
    );
}
```

Functional Component

A `Component` that is declared like a JS function.

```
const App = (greeting) => {
    return (
        <View style={styles.container}>
            <Text>{greeting}</Text>
        </View>
    );
}
```

Functional Component

A `Component` that is declared like a JS function.

```
const App = (props) => {
    return (
        <View style={styles.container}>
            <Text>{props.greetings}</Text>
        </View>
    );
}
```

Hooks

Functions that allow you to “hook into” React state and life cycle features from function components.

Hooks

Functions that allow you to “hook into” React state and life cycle features from function components.

Two Rules of Hooks

1) Only call Hooks at the **top level**
2) Only call Hooks from React **functional components**

`state` object (Class Components) → `useState` Hook (Functional Components)

```
import { useState } from 'react';
```

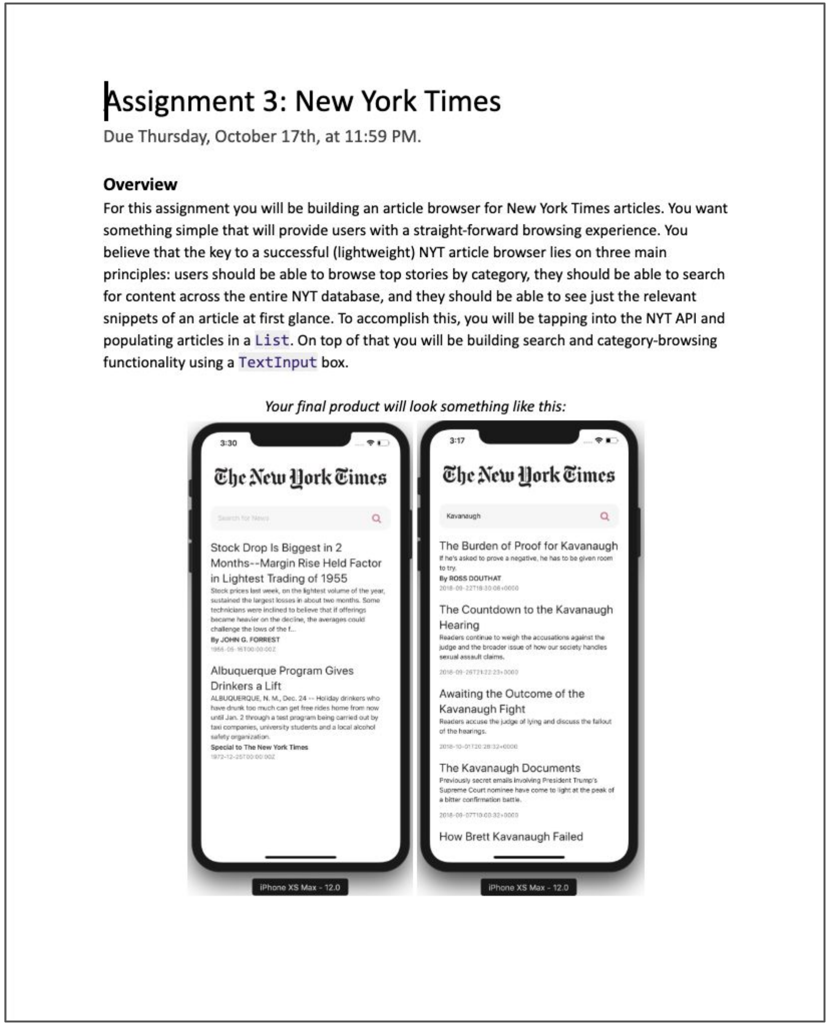
```
state = { x: z }                →   const [x, setX] = useState(z)

this.setState({ x: y })         →   setX(y)
```

Live Exercise

To-Do List

Complete part 4



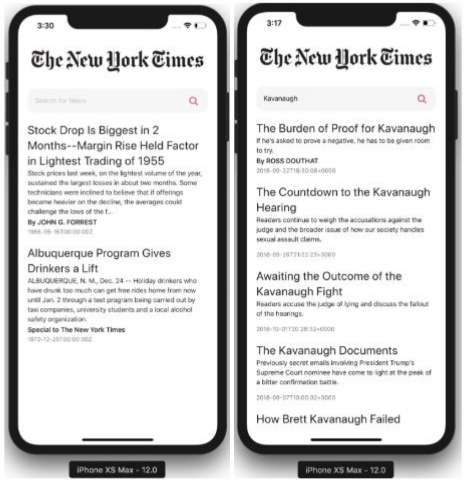
Assignment 3: New York Times

Due Thursday, October 17th, at 11:59 PM.

Overview

For this assignment you will be building an article browser for New York Times articles. You want something simple that will provide users with a straight-forward browsing experience. You believe that the key to a successful (lightweight) NYT article browser lies on three main principles: users should be able to browse top stories by category, they should be able to search for content across the entire NYT database, and they should be able to see just the relevant snippets of an article at first glance. To accomplish this, you will be tapping into the NYT API and populating articles in a `List`. On top of that you will be building search and category-browsing functionality using a `TextInput` box.

Your final product will look something like this:



Stock Drop Is Biggest in 2 Months--Margin Rise Held Factor in Lightest Trading of 1955

Stock prices last week, on the lightest volume of the year, sustained the largest losses in about two months. Some technicians were inclined to believe that if offerings became heavier on the decline, the averages could challenge the lows of the f...

By JOHN G. FORREST

1956-05-16T00:00:00Z

Albuquerque Program Gives Drinkers a Lift

ALBUQUERQUE, N. M., Dec. 24 -- Holiday drinkers who have drunk too much can get free rides home from now until Jan. 2 through a test program being carried out by taxi companies, university students and a local alcohol safety organization.

Special to The New York Times

1972-12-25T00:00:00Z

The Burden of Proof for Kavanaugh

If he's asked to prove a negative, he has to be given room to try.

By ROSS DOUTHAT

2018-09-22T18:30:08+0000

The Countdown to the Kavanaugh Hearing

Readers continue to weigh the accusations against the judge and the broader issue of how our society handles sexual assault claims.

2018-09-26T21:22:23+0000

Awaiting the Outcome of the Kavanaugh Fight

Readers accuse the judge of lying and discuss the fallout of the hearings.

2018-10-01T20:28:32+0000

The Kavanaugh Documents

Previously secret emails involving President Trump's Supreme Court nominee have come to light at the peak of a bitter confirmation battle.

2018-09-07T10:00:32+0000

How Brett Kavanaugh Failed

Due Thursday, October 17th

CS47: Cross-Platform Mobile Development

Lecture 3A: User-Interactive Components (TextInput + Lists)

James Landay
Abdallah AbuHashem
Tiffany Manuel
Cisco Vlahakis
Vy Mai

https://cs-47.stanford.edu

cs-47.slack.com

Fall 2019