CS47SI: Cross-Platform Mobile Development

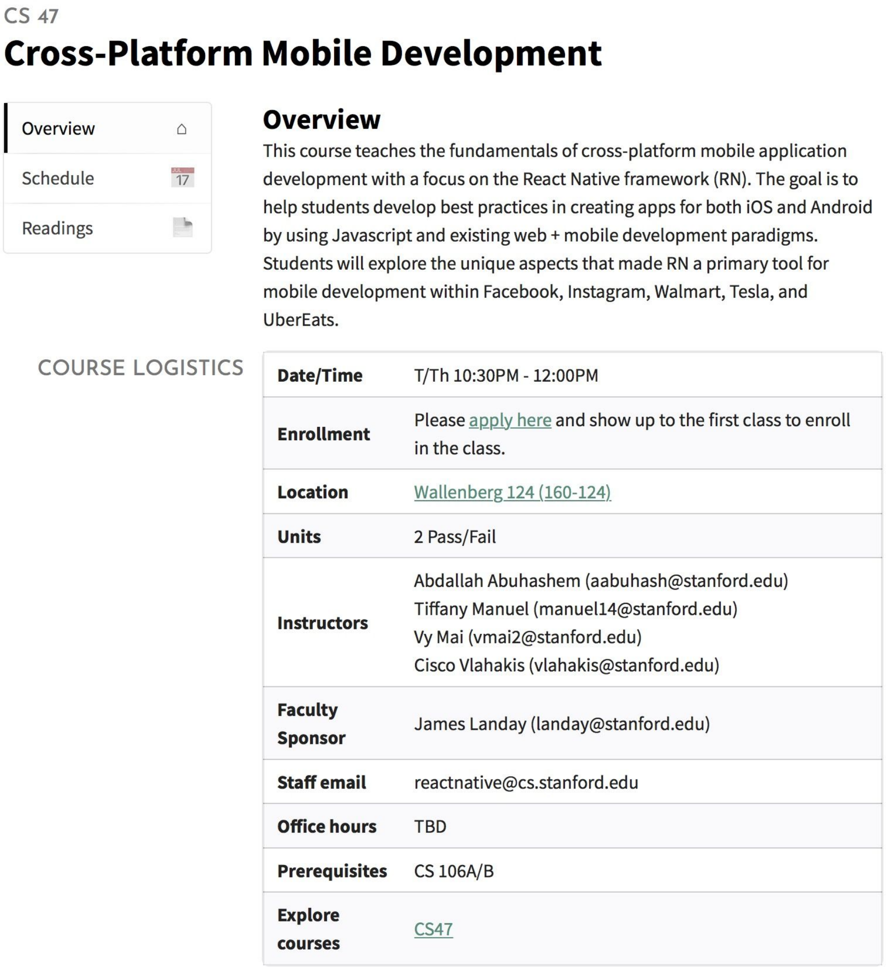
Lecture 4A: Third-Party Components & Expo Libraries

James Landay
Abdallah AbuHashem
Tiffany Manuel
Cisco Vlahakis
Vy Mai

https://cs47.stanford.edu

cs47-fall19.slack.com

Fall 2019



CS 47

Cross-Platform Mobile Development

- Overview ⌂
- Schedule
- Readings

Overview

This course teaches the fundamentals of cross-platform mobile application development with a focus on the React Native framework (RN). The goal is to help students develop best practices in creating apps for both iOS and Android by using Javascript and existing web + mobile development paradigms. Students will explore the unique aspects that made RN a primary tool for mobile development within Facebook, Instagram, Walmart, Tesla, and UberEats.

COURSE LOGISTICS

Date/Time	T/Th 10:30PM - 12:00PM
Enrollment	Please apply here and show up to the first class to enroll in the class.
Location	Wallenberg 124 (160-124)
Units	2 Pass/Fail
Instructors	Abdallah Abuhashem (aabuhash@stanford.edu) Tiffany Manuel (manuel14@stanford.edu) Vy Mai (vmai2@stanford.edu) Cisco Vlahakis (vlahakis@stanford.edu)
Faculty Sponsor	James Landay (landay@stanford.edu)
Staff email	reactnative@cs.stanford.edu
Office hours	TBD
Prerequisites	CS 106A/B
Explore courses	CS47

https://cs47.stanford.edu

To access lectures use Stanford email

Live Exercise

To-Do List

STARTER CODE

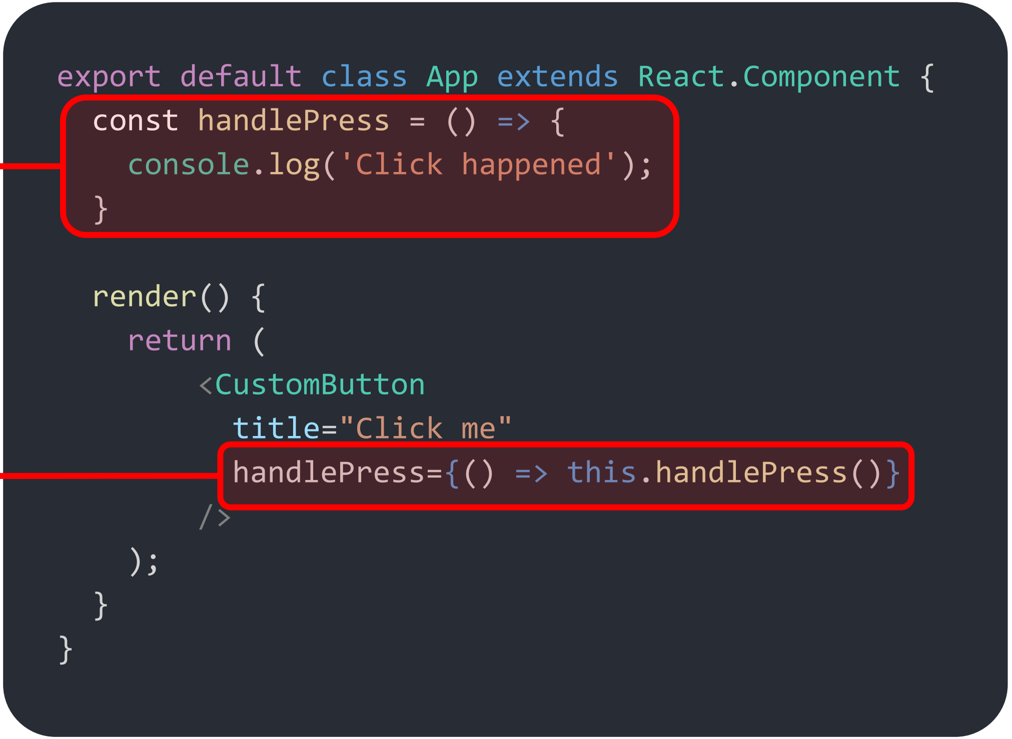
1) Run `npm install`
2) Open with Expo

Passing Function As Props

Fat Arrows Only

1 Write the function you want to pass in as a prop.

2 Pass the function as a prop using a fat arrow function.



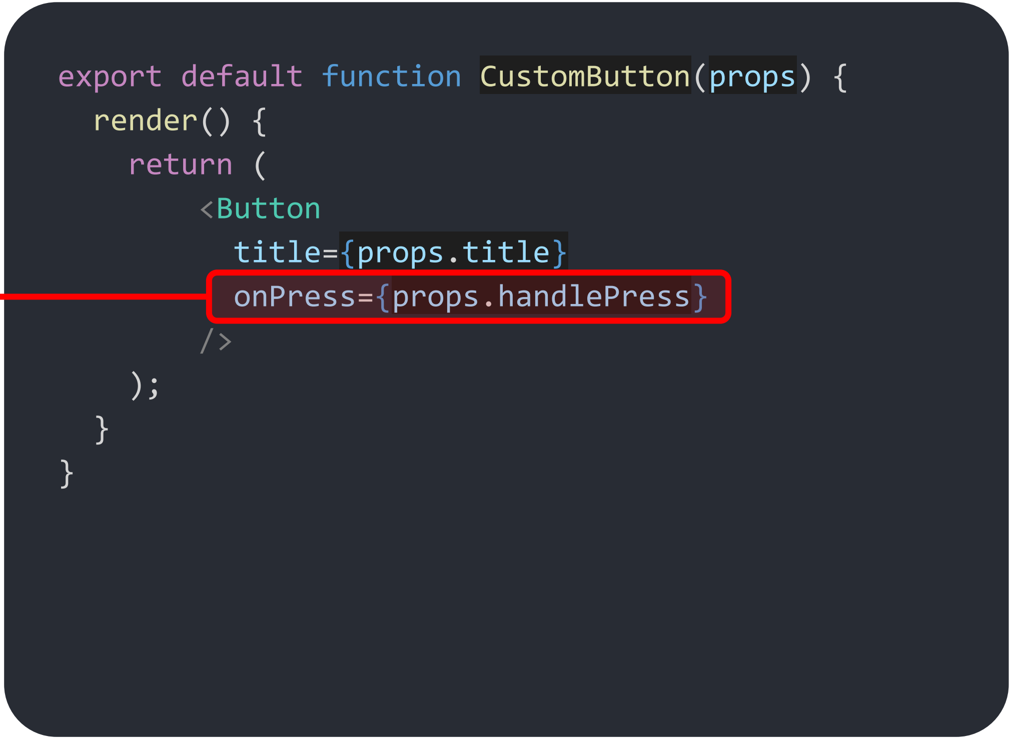
```
export default class App extends React.Component {
  const handlePress = () => {
    console.log('Click happened');
  }

  render() {
    return (
        <CustomButton
          title="Click me"
          handlePress={() => this.handlePress()}
        />
    );
  }
}
```

Passing Function As Props

Fat Arrows Only

Call the function in the child component



```
export default function CustomButton(props) {
  render() {
    return (
        <Button
          title={props.title}
          onPress={props.handlePress}
        />
    );
  }
}
```

MORE IN-DEPTH
Snack Example

Follow along code

https://reflect.sh/sole-sister

Live Exercise

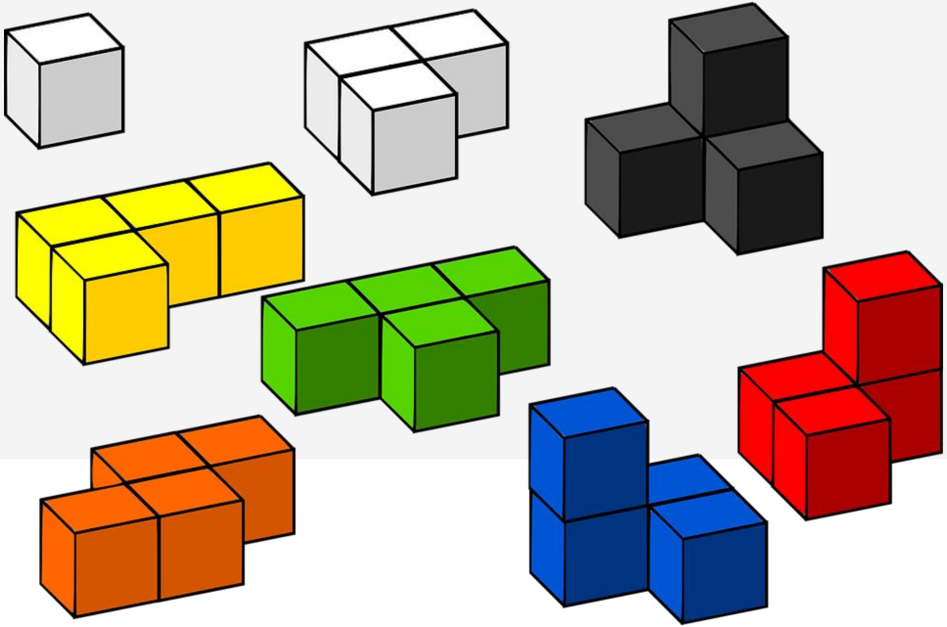
To-Do List

Complete part 1

Components

Building blocks

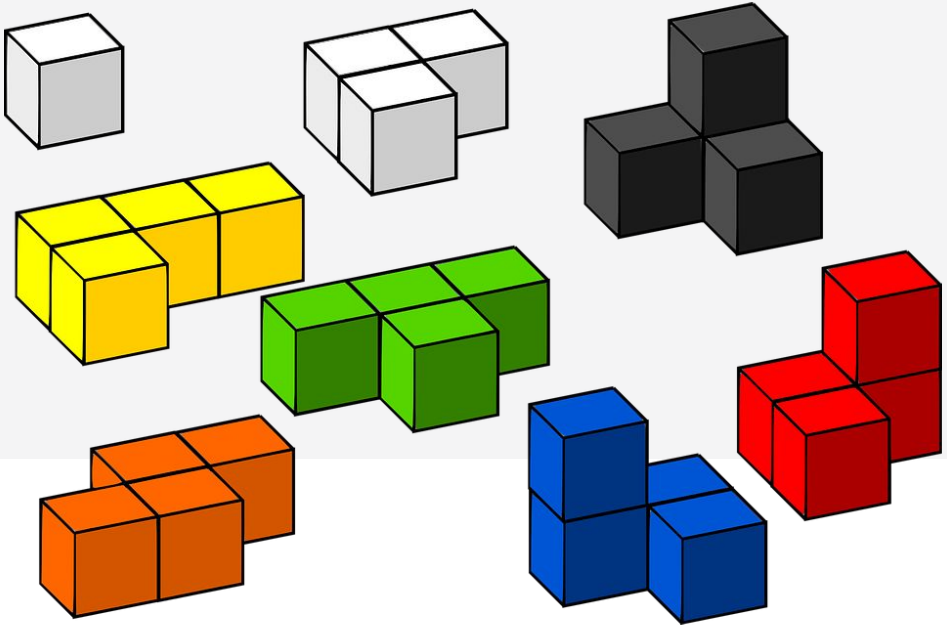
- React Native Components
- Custom Components
- Third-Party Components



Components

Building blocks

- React Native Components
- Custom Components
- Third-Party Components



Third-Party Components

WHY?

- Don’t reinvent the wheel
- Same time and energy

Third-Party Components

HOW?

1. `cd` into project directory

2. Run `npm install <third-party library> --save`
   NOTE: `--save` *is super important because it saves the library in package.json.*

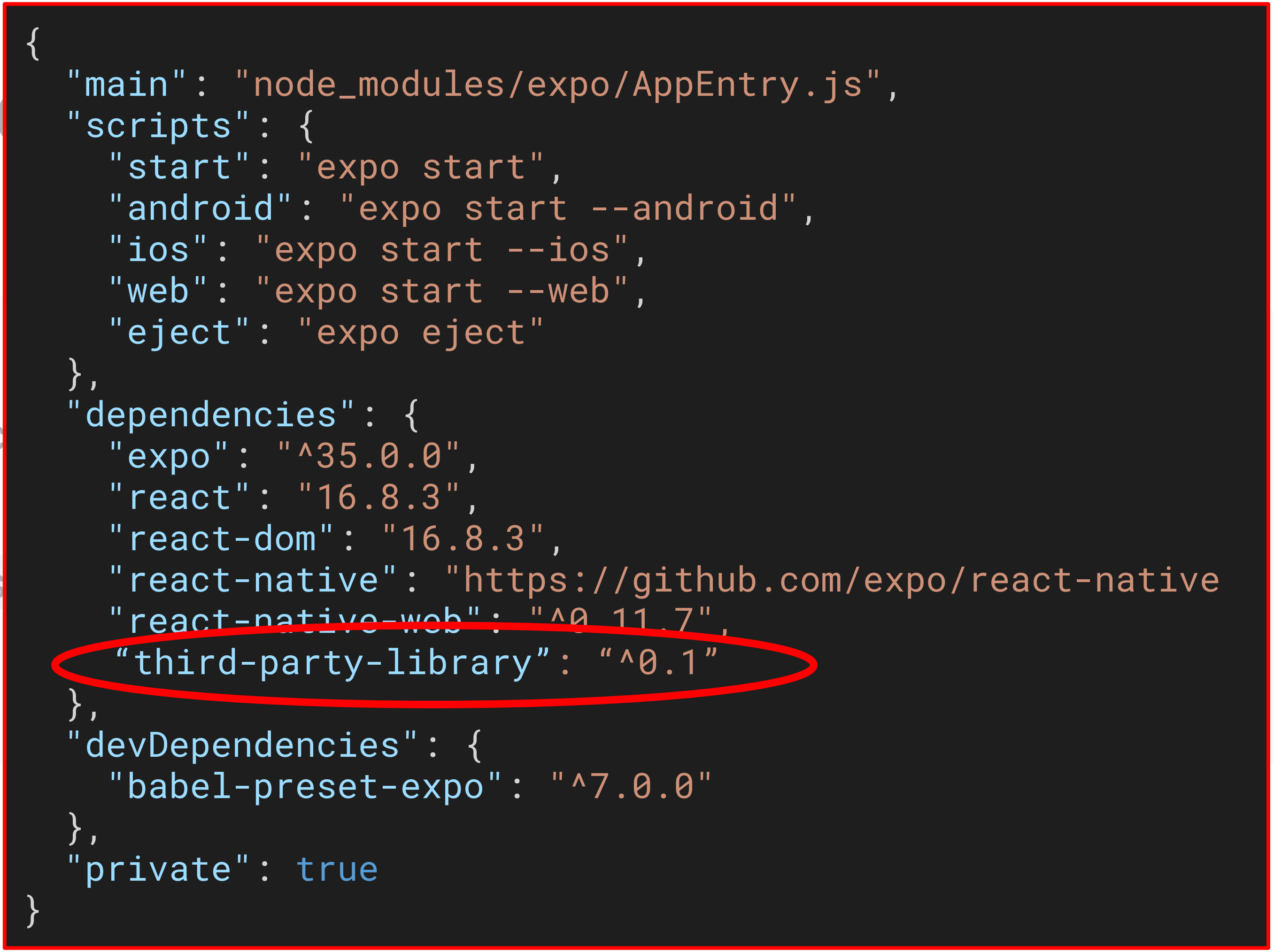
Third-Party (

HOW?

1 cd into projec

2 Run npm ins

NOTE: --save *is*



```
{
  "main": "node_modules/expo/AppEntry.js",
  "scripts": {
    "start": "expo start",
    "android": "expo start --android",
    "ios": "expo start --ios",
    "web": "expo start --web",
    "eject": "expo eject"
  },
  "dependencies": {
    "expo": "^35.0.0",
    "react": "16.8.3",
    "react-dom": "16.8.3",
    "react-native": "https://github.com/expo/react-native
    "react-native-web": "^0.11.7",
     “third-party-library”: “^0.1”
  },
  "devDependencies": {
    "babel-preset-expo": "^7.0.0"
  },
  "private": true
}
```

package.json

Third-Party Libraries

- React Native Elements
- NativeBase
- Expo Components

*See **API Reference** on sidebar for list of components.*

Follow new code

https://reflect.sh/sole-sister

Live Exercise

To-Do List

Complete part 2

Native Base CheckBox

Expo Libraries

- LinearGradient
- Font
- Camera
- ImagePicker
- WebView
- Constants
- etc

NOTE: *Some components do not need to be* `expo install`*-ed and come with Expo. Some do need to be* `expo install`*-ed. Read the documentation for each specific component to understand which cases require extra installation.*

Expo Vector Icons

- Expo Documentation
- Searchable Directory of Vector Icons

Follow along code

https://reflect.sh/sole-sister

Live Exercise

To-Do List

Complete part 3

Vector Icons

Third-Party Components

You can also download singular components from the npm registry:

- react-native-swipe-gestures
- react-native-modal
- react-native-animatable

NOTE: *Some components require linking, which then requires ejecting from Expo. For now, it is much simpler to avoid using such components.*

Follow along code

https://reflect.sh/sole-sister

Live Exercise

To-Do List

Complete part 4

react-native-swipe-gesture

Live Exercise

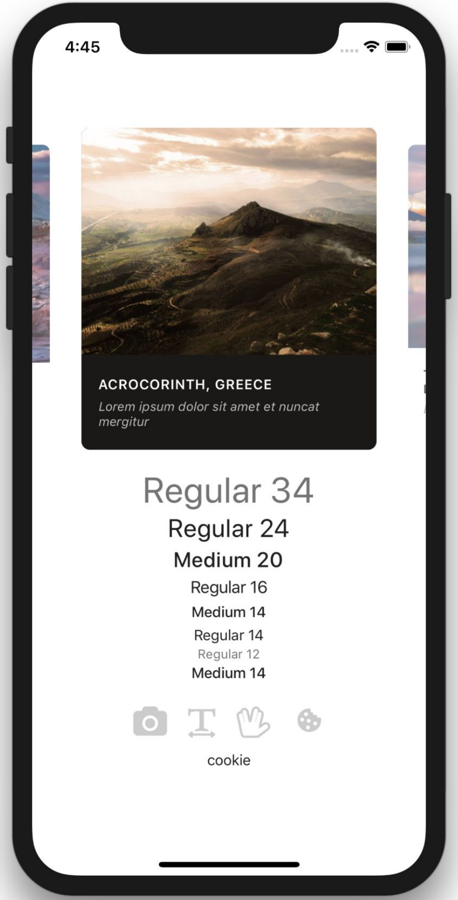
To-Do List

Final Code

https://github.com/stanford-cs47/Lecture4a-Final

Follow along code

https://reflect.sh/sole-sister



4:45

ACROCORINTH, GREECE

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Regular 24

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Regular 16

Medium 14

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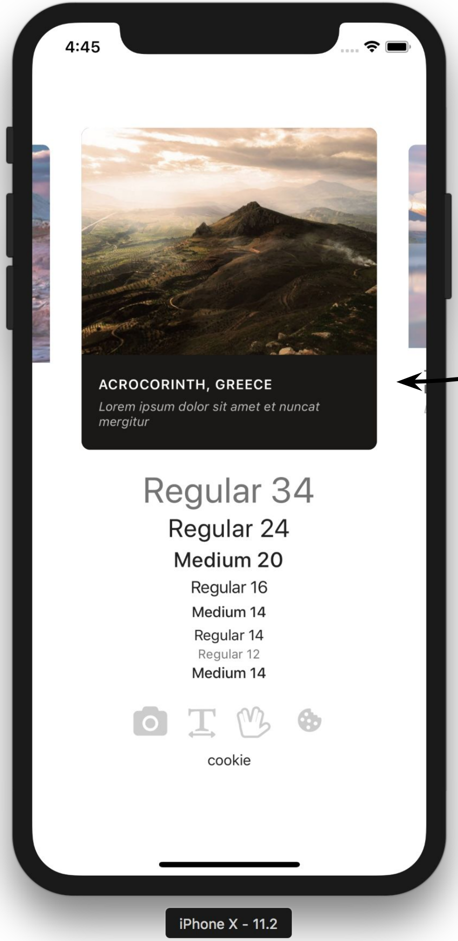
Regular 12

Medium 14

cookie

iPhone X - 11.2



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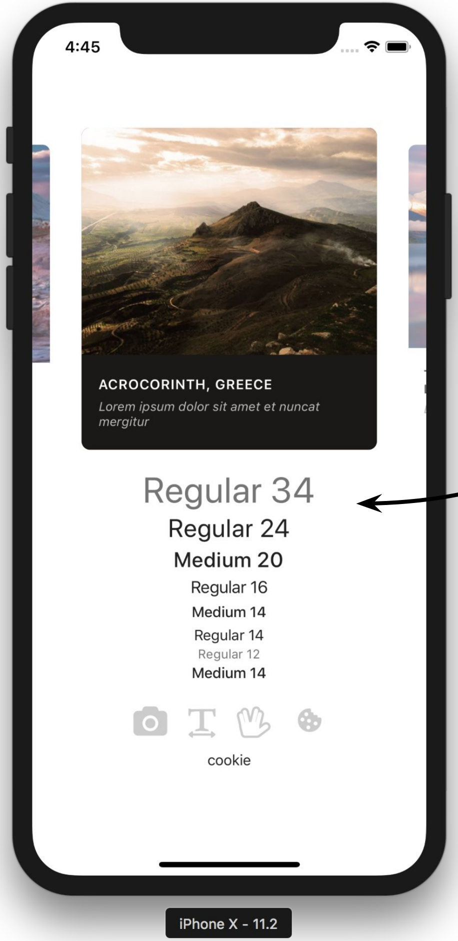
Snap Carousel

https://github.com/archriss/react-native-snap-carousel



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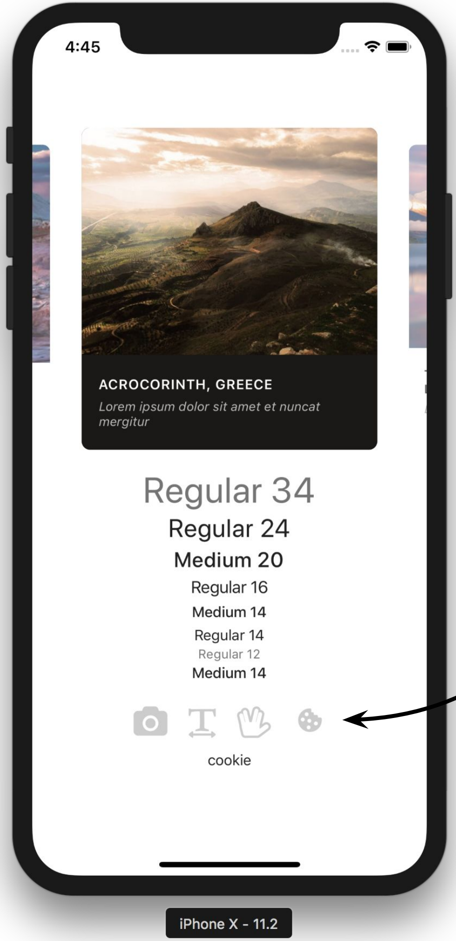
iPhone X - 11.2

Snap Carousel

Typography

https://github.com/hectahertz/react-native-typography



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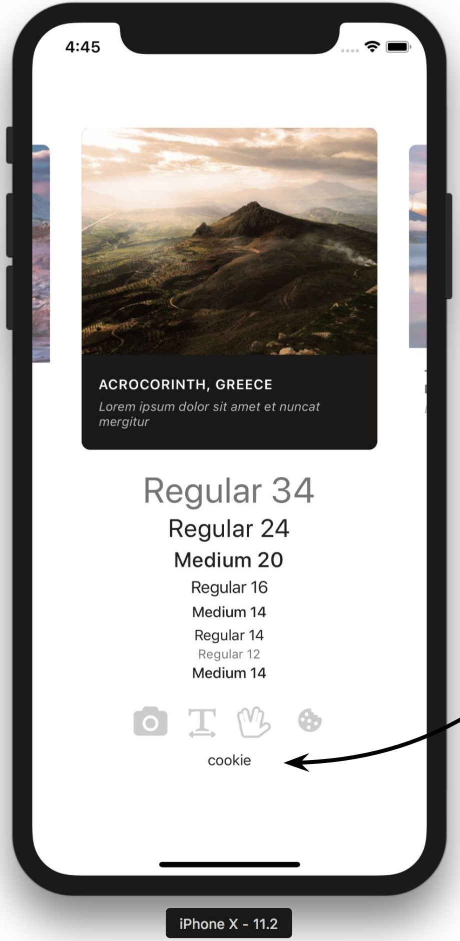
iPhone X - 11.2

Snap Carousel

Typography

Vector Icons

https://github.com/oblador/react-native-vector-icons
https://expo.github.io/vector-icons/



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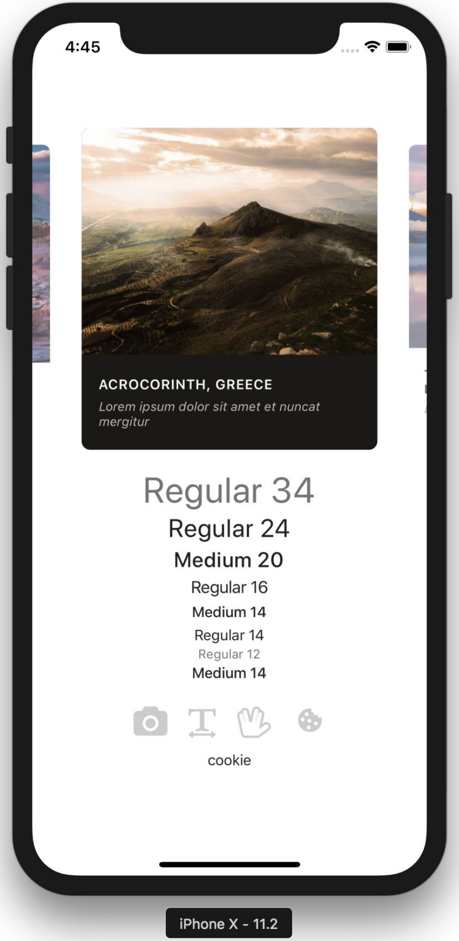
Snap Carousel

Typography

Vector Icons

Animatable

https://github.com/oblador/react-native-animatable



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cookie

Snap Carousel

Typography

Vector Icons

Animatable

Exercise

Extend your ToDo app with any third-party component.

SOME IDEAS:

- Add a clickable 'X' vector icon to make each ToDo deleteable (again)
- Use a third-party button element to clear the entire list of items (Native Base or React Native Elements)
- Make a toast appear when you add and/or delete an item (Native Base)
- Google a functionality/UI you want to have and try to use a third-party component that pops up

Office Hours

Email us directly if you’re not available at these times

Abdallah AbuHashem
Monday (12-1 PM) @ Huang Basement
Or by appointment

Vy Mai
Tuesday (3-4 PM) @ Old Union
Or by appointment

Cisco Vlahakis
Wednesday (8-9 PM) @ Huang Basement
Or by appointment

Tiffany Manuel
Thursday (2-3 PM) @ Huang Basement
Or by appointment

For today’s attendance, please see #general channel in our Slack.

Invitation:
https://tinyurl.com/cs47slack2019

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