

# App Navigation

## Native App Development

**Time:** 60 mins

## Introduction

In this class, student/s will be introduced to different types of app navigation methods. Students will learn to add a bottom navigation tab containing unique buttons through which the user can switch between multiple screens of the app. Students will also learn to pass data such as the user information across the screens and customize the display of delete buttons over feeds cards. .

## React Native Commands and Components Introduced

- `<NavigationContainer>` Wraps the whole app.
- `<Tab.Navigator>` Adds a tab at the bottom of the given screen.
- `<Tab.Screen/>` Adds the screen to the app and its properties are used to link a given screen to the tab.

## Vocabulary

- **React Navigation:** React navigation library is composed of utilities that are used to enable navigation structure for an app.
- **Bottom Tab Navigation:** A simple tab bar at the bottom of the app screen that facilitates switching between the screens via the tab icons.
- **Material Icons:** Pre Designed icons used commonly throughout a UI for different types of projects and platforms by developers in their apps and designers. These are available on the material icon library.

## Learning Objectives

Student/s should be able to:

- **Recall** the concept of state variables in React Native.
- **Explain** the different types of navigation an app screen is composed of.
- **Demonstrate** how to navigate between the app screens using bottom tab navigation.
- **Illustrate** the use of props pass between the multiple screens of the app.

## Activities

1. **Class Narrative:** (2 mins)

- Brief the student/s we created multiple screens on the Snap Buzz app. We can view the different screens by changing the screen name in the App.js file. We now need to enable a user to switch between the different app screens using navigation technique.

## 2. Concept Introduction Activity: (5 mins)

- Let the student/s play the explore-activity and observe how we can switch between different app screens.
- Guide the student/s to explore tabs at the bottom screen of the app.
- Using the slides, explain how:
  - we can navigate to the Feed screen, the Create Feed screen, or the Profile Screen using the buttons in the bottom tab.
  - Sign In and Sign Out button appear one after the other.
  - the buttons for feed, create feed and profile screen are fixed at the bottom of the app on a tab.

## 3. Activity 1: Add a Bottom Tab Navigator (11 mins)

### Teacher Activity: (5 mins)

- Explain the types of navigation and focus on the fact that tabs for navigation can be placed at the bottom or top of the app screen.
- Explain how we can add each screen one by one using `<Tab.Screen/>` within the `<Tab.Navigator>` and properties are set for each screen.
- Demonstrate how we can add the tab icon and link it to the Feed Screen for the navigation tab.

### Student Activity: (6 mins)

- Guide the students to add the icon for Profile screen and link the Profile screen to it for navigation.

## 4. Activity 2: Add Username to the Profile Screen (14 mins)

### Teacher Activity: (6 mins)

- Explain that the username cannot be seen in the Profile Screen as the user didn't Sign Up.
- Show how user details are stored in JSON format on the Sign In screen.
- Show how we can pass and receive the user details in the BottomTabNavigator using the a parameter named props.

### Student Activity: (8 mins)

- Guide the student/s to add the user details to the Profile Screen.

## 5. Activity 3: Add Username to the Feeds (20 mins)

### Teacher Activity: (8 mins)

- Explain how to take user details from the bottom tab navigator and pass them to the different screens using route and route.params.
- Explain the logic to check for userId to display or hide the delete button on a given feed.

### Student Activity: (12 mins)

- Guide the students to pass and receive the user details for the feeds and comments.
- Guide the students to check the userId to hide or display the delete button on personal feeds.

**6. Introduce the Post class project: (2 min)**

- Add a tab to navigate to the different screens of the Bid & Buy app.

**7. Test and Summarize the class learnings: (5 mins)**

- Check for understanding through quizzes and summarize learning after respective missions.
- Summarize the overall class learning towards the end of the class.

**8. Additional activities:**

- Encourage the student/s to add functionality to display the username against the comments you add.
- Encourage the student/s to display the feeds by the logged in user on the MyFeeds screen.

**9. State the Next Class Objective: (1 min)**

- We will learn to create an app to book a doctor appointment and chat using React Native and Firebase.

## U.S. Standards:

CSTA: 2-AP-13, 2-AP-16, 2-AP-19

Links Table		
Activity	Activity Name	Link
Class Presentation	App Navigation	<a href="https://s3-whjr-curriculum-uploads.whjr.online/689b4b62-3660-43eb-a86f-855a78f01703.html">https://s3-whjr-curriculum-uploads.whjr.online/689b4b62-3660-43eb-a86f-855a78f01703.html</a>
Explore Activity	App Navigation	<a href="https://snack.expo.dev/@procodingclass/wad-402---56-sa3_2-delete-the-feed---solution">https://snack.expo.dev/@procodingclass/wad-402---56-sa3_2-delete-the-feed---solution</a>
Teacher Activity 1	Add a Bottom Tab Navigator	<a href="https://snack.expo.dev/@procodingclass/wad-402---56-ta1-add-a-bottom-tab-navigator">https://snack.expo.dev/@procodingclass/wad-402---56-ta1-add-a-bottom-tab-navigator</a>
Teacher Activity 1 Solution	Add a Bottom Tab Navigator	<a href="https://snack.expo.dev/@procodingclass/wad-402---56-ta1-add-a-bottom-tab-navigator---solution">https://snack.expo.dev/@procodingclass/wad-402---56-ta1-add-a-bottom-tab-navigator---solution</a>
Student Activity 1	Add a Bottom Tab Navigator	<a href="https://snack.expo.dev/@procodingclass/wad-402---56-sa1-add-a-bottom-tab-navigator">https://snack.expo.dev/@procodingclass/wad-402---56-sa1-add-a-bottom-tab-navigator</a>
Teacher Reference: Student Activity 1 Solution	Add a Bottom Tab Navigator	<a href="https://snack.expo.dev/@procodingclass/wad-402---56-sa1-add-a-bottom-tab-navigator---solution">https://snack.expo.dev/@procodingclass/wad-402---56-sa1-add-a-bottom-tab-navigator---solution</a>

Teacher Activity 2	Add Username to the Profile Screen	<a href="https://snack.expo.dev/@procodingclass/wad-402---56-ta2-add-username-to-the-profile-screen">https://snack.expo.dev/@procodingclass/wad-402---56-ta2-add-username-to-the-profile-screen</a>
Teacher Activity 2 Solution	Add Username to the Profile Screen	<a href="https://snack.expo.dev/@procodingclass/wad-402---56-ta2-add-username-to-the-profile-screen---solution">https://snack.expo.dev/@procodingclass/wad-402---56-ta2-add-username-to-the-profile-screen---solution</a>
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Teacher Activity 3	Add Username to the Feeds	<a href="https://snack.expo.dev/@procodingclass/wad-402---56-ta3_1-add-username-to-the-feeds">https://snack.expo.dev/@procodingclass/wad-402---56-ta3_1-add-username-to-the-feeds</a>
Teacher Activity 3 Solution	Add Username to the Feeds	<a href="https://snack.expo.dev/@procodingclass/wad-402---56-ta3_1-add-username-to-the-feeds---solution">https://snack.expo.dev/@procodingclass/wad-402---56-ta3_1-add-username-to-the-feeds---solution</a>
Student Activity 3.1	Add Username to the Feeds	<a href="https://snack.expo.dev/@procodingclass/wad-402---56-sa3_1-add-username-to-the-feeds">https://snack.expo.dev/@procodingclass/wad-402---56-sa3_1-add-username-to-the-feeds</a>
Teacher Reference: Student Activity 3.1 Solution	Add Username to the Feeds	<a href="https://snack.expo.dev/@procodingclass/wad-402---56-sa3_1-add-username-to-the-feeds---solution">https://snack.expo.dev/@procodingclass/wad-402---56-sa3_1-add-username-to-the-feeds---solution</a>
Student Activity 3.2	Add Username to the Feeds	<a href="https://snack.expo.dev/@procodingclass/wad-402---56-sa3_2-delete-the-feed">https://snack.expo.dev/@procodingclass/wad-402---56-sa3_2-delete-the-feed</a>
Teacher Reference: Student Activity 3.2 Solution	Add Username to the Feeds	<a href="https://snack.expo.dev/@procodingclass/wad-402---56-sa3_2-delete-the-feed--solution">https://snack.expo.dev/@procodingclass/wad-402---56-sa3_2-delete-the-feed--solution</a>
Student's Additional Activity 1	Add Username to the Comments	<a href="https://snack.expo.dev/@procodingclass/wad-402---56-aa1-add-username-to-the-comments">https://snack.expo.dev/@procodingclass/wad-402---56-aa1-add-username-to-the-comments</a>
Teacher Reference: Student's Additional Activity 1 Solution	Add Username to the Comments	<a href="https://snack.expo.dev/@procodingclass/wad-402---56-aa1-add-username-to-the-comments---solution">https://snack.expo.dev/@procodingclass/wad-402---56-aa1-add-username-to-the-comments---solution</a>
Student's Additional Activity 2	Display the User Feeds	<a href="https://snack.expo.dev/@procodingclass/wad-402---56-aa2-display-the-user-feeds">https://snack.expo.dev/@procodingclass/wad-402---56-aa2-display-the-user-feeds</a>
Teacher Reference: Student's Additional Activity 2 Solution	Display the User Feeds	<a href="https://snack.expo.dev/@procodingclass/wad-402---56-aa2-display-the-user-feeds">https://snack.expo.dev/@procodingclass/wad-402---56-aa2-display-the-user-feeds</a>
Post Class Project	Add Tab Navigation	<a href="https://snack.expo.dev/@procodingclass/wad-402---56-pcp-add-bottom-tab-navigation">https://snack.expo.dev/@procodingclass/wad-402---56-pcp-add-bottom-tab-navigation</a>
Teacher Reference: Post Class Project Solution	Add Tab Navigation	<a href="https://snack.expo.dev/@procodingclass/wad-402---56-pcp-add-bottom-tab-navigation---solution?platform=web">https://snack.expo.dev/@procodingclass/wad-402---56-pcp-add-bottom-tab-navigation---solution?platform=web</a>

