

React Navigation Functions: Detailed Explanation

1. navigation.navigate(routeName, params)

Description:

- Navigates to the specified screen (routeName).
- If the screen is already in the stack, it brings it to the foreground instead of adding a new instance.
- Accepts optional params to pass data to the target screen.

Use Case:

- Used for switching between screens without duplicating them.

Example:

```
navigation.navigate('Profile', { userId: 123 });
```

2. navigation.push(routeName, params)

Description:

- Always creates a new instance of the specified screen and pushes it onto the stack.
- Unlike navigate(), it does not check if the screen is already in the stack.

Use Case:

- Used when you need multiple instances of the same screen.

Example:

```
navigation.push('Profile', { userId: 456 });
```

Difference between navigate and push:

- navigate(): Moves to the screen if not already on top, otherwise does nothing.
- push(): Always creates a new instance of the screen.

3. navigation.replace(routeName, params)

Description:

- Replaces the current screen with a new one, removing the previous

screen from the stack.

Use Case:

- Used when switching screens where going back is not necessary.

Example:

```
navigation.replace('Dashboard');
```

4. navigation.goBack()

Description:

- Moves back to the previous screen in the stack.

Use Case:

- Used for implementing a back button.

Example:

```
navigation.goBack();
```

5. navigation.pop(n)

Description:

- Removes the top n screens from the stack.

Use Case:

- Used to go back multiple screens at once.

Example:

```
navigation.pop(2); // Go back 2 screens
```

6. navigation.popToTop()

Description:

- Removes all screens from the stack except the first one.

Use Case:

- Used when the user wants to return to the home screen quickly.

Example:

```
navigation.popToTop();
```

7. navigation.reset({ index, routes })

Description:

- Completely resets the navigation state, removing all previous screens and setting a new stack.

Use Case:

- Used when resetting the navigation state after logging out.

Example:

```
navigation.reset({ index: 0, routes: [{ name: 'Login' }] });
```

Choosing the Right Navigation Method:

- **navigate():** Switch to a screen without duplicating it.
- **push():** Create a new instance of the screen every time.
- **replace():** Replace the current screen so the user can't go back.
- **goBack():** Return to the previous screen.
- **pop(n):** Go back n screens.
- **popToTop():** Go back to the first screen.
- **reset():** Clear all navigation history and set a new screen stack.