Topic	**Monkey-Chunky App - A Case Study**	
Class Description	**Students explore a case study for another app which will help people with reading difficulties practice reading. Students design the UI/UX for the app and build the wireframe for the app including any added game design elements. Students then learn how to take input from the user and display it in the React native environment.**	
Class	**C63**	
Class time	**45 mins**	
Goal	● Explore case study of an app designed for students with reading difficulties. ● Design wireframe for the app (including UI/UX). ● Collect input from the user and display it on the screen.	
Resources Required	● Teacher Resources ○ Laptop with internet connectivity ○ Earphones with mic ○ Notebook and pen ○ Android/iOS Smartphone with Expo App installed ● Student Resources ○ Laptop with internet connectivity ○ Earphones with mic ○ Notebook and pen ○ Android/iOS Smartphone with Expo App installed	
Class structure	**Warm Up** **Teacher-led Activity** **Student-led Activity** **Wrap up**	**5 mins** **15 min** **15 min** **5 min**

WARM-UP SESSION - 5 mins

CONTEXT

- **Explore case study of an app designed for students with reading difficulties.**

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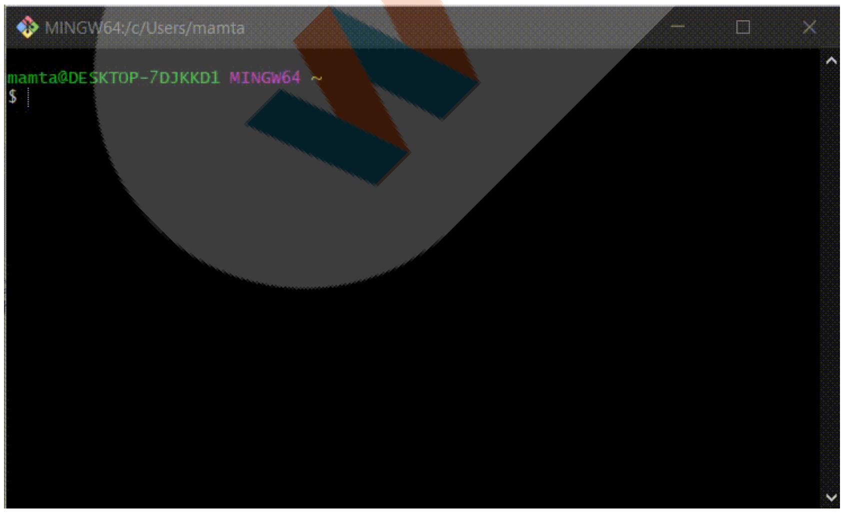
Teacher starts slideshow from slides 1 to 12 Refer to speaker notes and follow the instructions on each slide.	
Activity details	**Solution/Guidelines**
Hey <student's name>. How are you? It's great to see you! Are you excited to learn something new today? **Run the presentation from slide 1 to slide 4** **Following are the WARM-UP session deliverables:** ● **Greet the student.** ● **Revision of previous class activities.** ● **Quizzes**	**ESR**: Hi, thanks, Yes I am excited about it! Click on the slide show tab and present the slides

QnA Session	
Question	**Answer**

Which command is used to navigate between different folders on the computer?

MINGW64:/c/Users/mamta
`mamta@DESKTOP-7DJKKD1 MINGW64 ~`
`$`
 	
A. mkdir
	B

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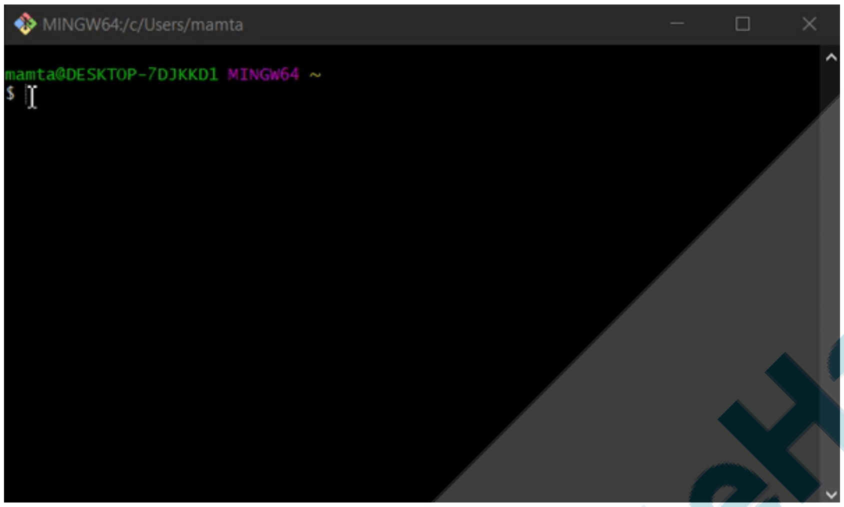
B. cd C. npm D. expo	

Which command is used to run your code written in the local environment?
`MINGW64:/c/Users/mamta`
`mamta@DESKTOP-7DJKKD1 MINGW64 ~`
`$`
A. expo-run
B. expo on
C. expo npm
D. expo start
	D

Continue the WARM-UP session	
Activity details	**Solution/Guidelines**
Run the presentation from slide 5 to slide 12 to set the problem statement. **Following are the WARM-UP session deliverables:** ● Appreciate the student. ● Explain Monkey-Chunkey App	Narrate the story by using hand gestures and voice modulation methods to bring in more interest in students.
Teacher ends slideshow	

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	You can watch the video in **Student Activity 2** and read about phonemes in **Student activity 1** to learn more about how word sounds are made up of phonemes.	Student goes through **Student Activity 1 and 2**
TEACHER-LED ACTIVITY - 15 mins		
Teacher Initiates Screen Share		
CHALLENGE ● **Design wireframe / UI / UX for the app.**		
Step 2: Teacher-led Activity (15 min)	What do we do before actually going on to build the app?	ESR: We build a wireframe of how our app will appear.
	Building a wireframe is also called designing the User Interface (UI) or User Experience (UX). It is a crucial part of any app. It defines how your app will be used by the user and how they will experience it. Like coding, designing the user interface/user experience (UI/UX) is also an iterative process. We design a user interface and implement it in the app. After implementation and testing, we might realize that the user experience could be made better by tweaking a few features in our app and we make those changes to the UI/UX. This can go on till we are completely satisfied. Can you spend some time designing	

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	the wireframe for our Monkey-Chunky App? You can use a paper and pen to draw the wireframe. Allow the student some time to draw a wireframe for the monkey chunky app.	The student uses a paper and pen to draw a wireframe for the Monkey-Chunky App.
	Can you explain your wireframe and how your user is going to interact with your app?	The student explains the wireframe to the teacher.
	Great! Let's get started on building this app. While we are working on this project, we will learn several new things about React Native and React native Components.	
	We can start our project either on Expo snack online as we were doing for previous projects OR we can do so locally using expo-cli tools we installed in the last class. To start the project locally - you need to type: **expo init <project name>** Choose a blank project and let expo install all the expo libraries for the project. A project directory with your project name will be created. Then change directory (cd) and open the folder in any code editor.	The student chooses whether to code in Expo snack or locally.

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	You can also run **expo start** to look at the output of your code. Alternatively, you can also use the online snack expo (**Teacher Activity 3**)	
	Alright, we have seen several in-built React native components so far. We have also built some of our own components like AppHeader. There are other developers who have also built several react native components and open-sourced them as React Native UI libraries. We can directly import these components in our project and use them. The advantage of using these components is that they are well-designed and thoroughly tested. One of the popular React Native UI libraries which developers like to use is 'React Native Elements'. You can learn about the different components available and their props, examples on how to use them through the documentation available.	The student goes through the documentation available in **Student Activity 4.**

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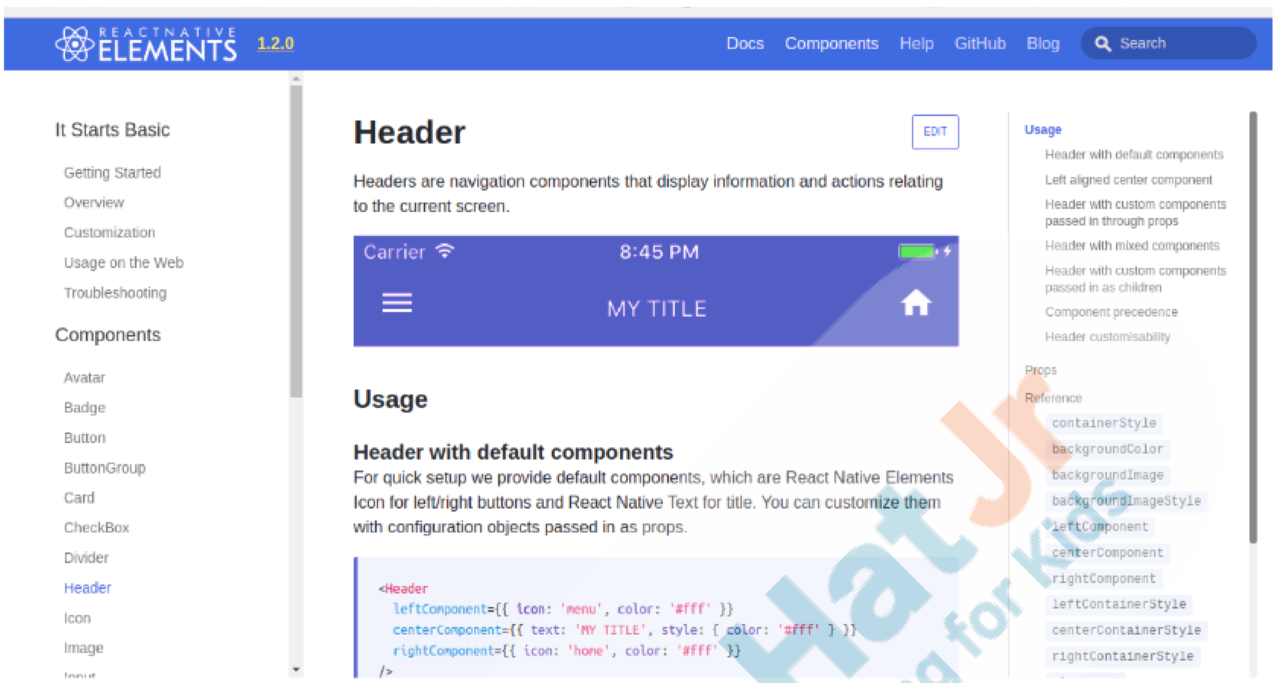


REACTNATIVE ELEMENTS 1.2.0
Docs Components Help GitHub Blog Search

It Starts Basic
- Getting Started
- Overview
- Customization
- Usage on the Web
- Troubleshooting

Components
- Avatar
- Badge
- Button
- ButtonGroup
- Card
- CheckBox
- Divider
- Header
- Icon
- Image

Header

EDIT

Headers are navigation components that display information and actions relating to the current screen.

Usage

Header with default components

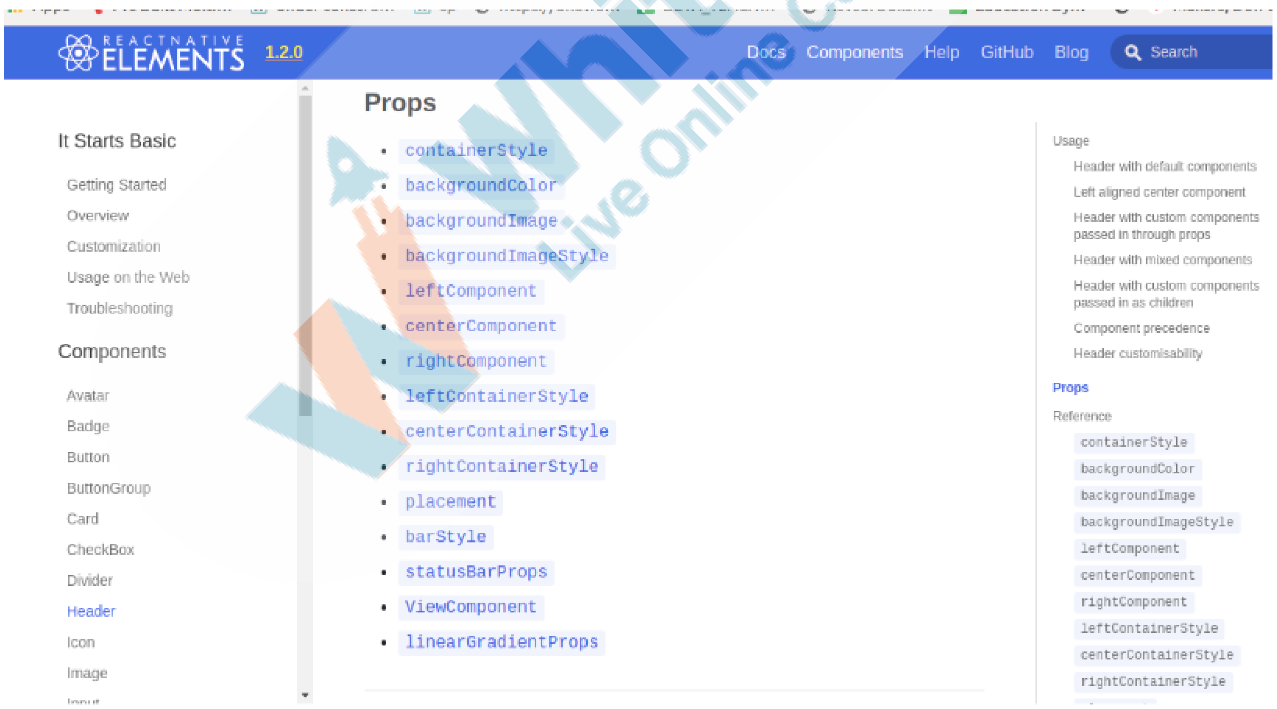
For quick setup we provide default components, which are React Native Elements Icon for left/right buttons and React Native Text for title. You can customize them with configuration objects passed in as props.

```
<Header
  leftComponent={{ icon: 'menu', color: '#fff' }}
  centerComponent={{ text: 'MY TITLE', style: { color: '#fff' } }}
  rightComponent={{ icon: 'home', color: '#fff' }}
/>
```

Usage
- Header with default components
- Left aligned center component
- Header with custom components passed in through props
- Header with mixed components
- Header with custom components passed in as children
- Component precedence
- Header customisability

Props

Reference
- containerStyle
- backgroundColor
- backgroundImage
- backgroundImageStyle
- leftComponent
- centerComponent
- rightComponent
- leftContainerStyle
- centerContainerStyle
- rightContainerStyle



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Components
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- Badge
- Button
- ButtonGroup
- Card
- CheckBox
- Divider
- Header
- Icon
- Image

Props

- `containerStyle`
- `backgroundColor`
- `backgroundImage`
- `backgroundImageStyle`
- `leftComponent`
- `centerComponent`
- `rightComponent`
- `leftContainerStyle`
- `centerContainerStyle`
- `rightContainerStyle`
- `placement`
- `barStyle`
- `statusBarProps`
- `ViewComponent`
- `linearGradientProps`

Usage
- Header with default components
- Left aligned center component
- Header with custom components passed in through props
- Header with mixed components
- Header with custom components passed in as children
- Component precedence
- Header customisability

Props

Reference
- containerStyle
- backgroundColor
- backgroundImage
- backgroundImageStyle
- leftComponent
- centerComponent
- rightComponent
- leftContainerStyle
- centerContainerStyle
- rightContainerStyle

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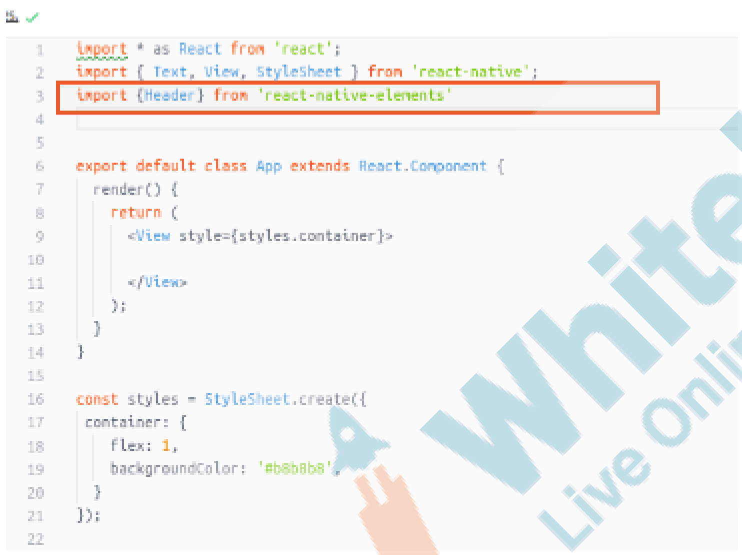
	Let's use one of their components, ‘Header’. Teacher imports the component from react-native-elements. Note: If student is doing this locally, they have to first use ‘npm install react-native-elements’ to install the react-native-elements library.	The student observes and learns.



```
import * as React from 'react';
import { Text, View, StyleSheet } from 'react-native';
import {Header} from 'react-native-elements'


export default class App extends React.Component {
  render() {
    return (
      <View style={styles.container}>

      </View>
    );
  }
}

const styles = StyleSheet.create({
 container: {
    flex: 1,
    backgroundColor: '#b8b8b8',
  }
});
```

	Let's use the ‘Header’ component in our App. Teacher shows how to use the Header Component by referring to the docs and coding in the app.	The student observes how to use Header Component.

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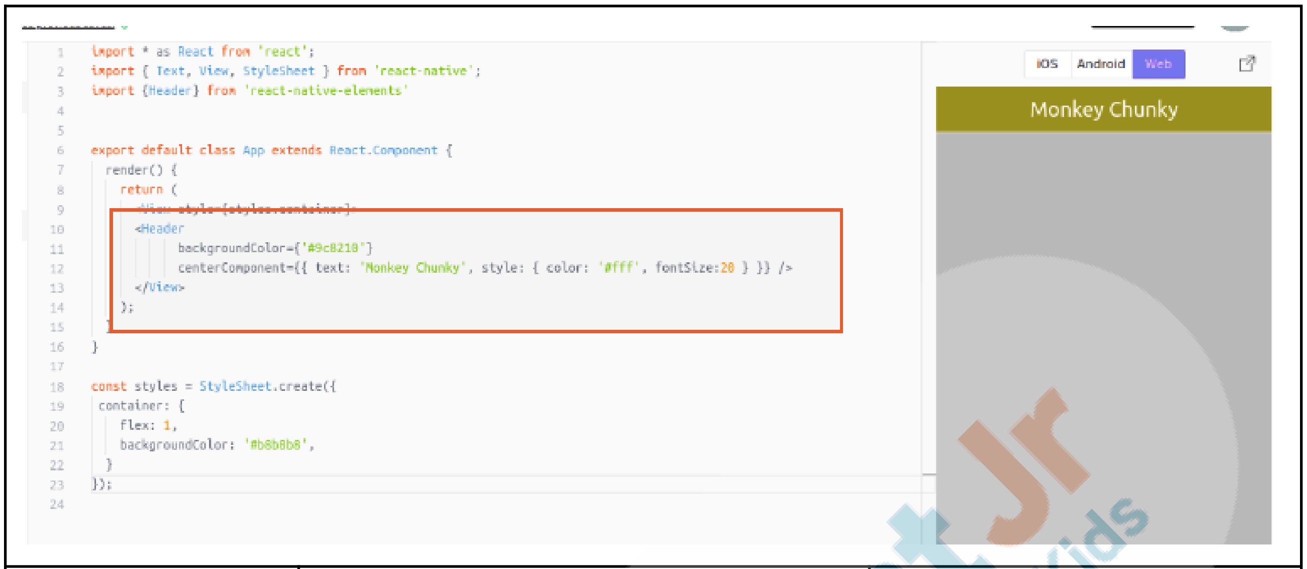

```
import * as React from 'react';
import { Text, View, StyleSheet } from 'react-native';
import {Header} from 'react-native-elements'


export default class App extends React.Component {
  render() {
    return (
      <View style={styles.container}>
      <Header
          backgroundColor={'#9c8210'}
          centerComponent={{ text: 'Monkey Chunky', style: { color: '#fff', fontSize:20 } }} />
      </View>
    );
  }
}

const styles = StyleSheet.create({
  container: {
    flex: 1,
    backgroundColor: '#b8b8b8',
  }
});
```

	You see, using new React native components is not hard at all! Now, we need to use a component which will take input from the user. There is a React native component called 'TextInput' for this. Using it is slightly trickier. Can you take it as a challenge to collect input from the user and display it in your app.? I will, of course, guide you!	The student takes up the challenge.

Teacher Stops Screen Share

STUDENT-LED ACTIVITY - 25 mins

- **Ask Student to press ESC key to come back to panel**
- **Guide Student to start Screen Share**
- **Teacher gets into Fullscreen**

ACTIVITY

- **Collect input from the user and display it on the screen.**

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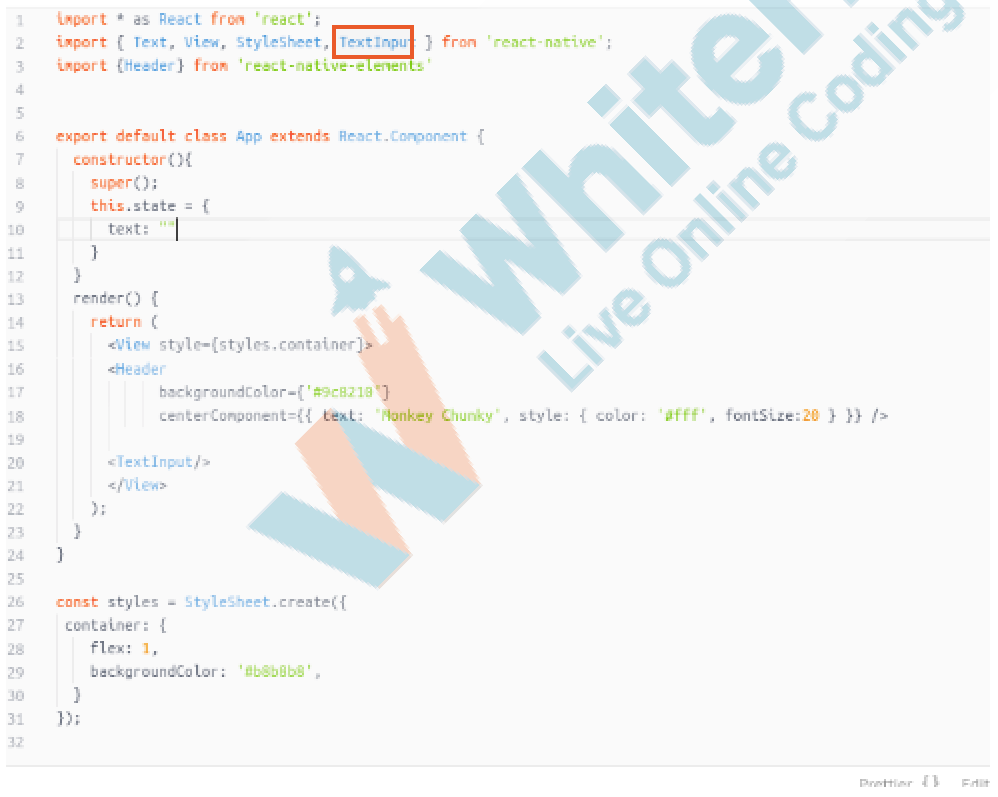
Teacher starts slideshow from slides 13 to 14 Refer to speaker notes and follow the instructions on each slide.		
	Now it's your turn. Please share your screen with me.	
Teacher ends slideshow		
Step 3: Student-Led Activity (15 min)	We are going to use a new Component called 'TextInput' which is part of React Native library. So let's first import it.	Student imports 'TextInput' from React Native



```
import * as React from 'react';
import { Text, View, StyleSheet, TextInput } from 'react-native';
import {Header} from 'react-native-elements'


export default class App extends React.Component {
  constructor(){
    super();
    this.state = {
      text: ""
    }
  }
  render() {
    return (
      <View style={styles.container}>
      <Header
            backgroundColor={'#9c8210'}
            centerComponent={{ text: 'Monkey Chunky', style: { color: '#fff', fontSize:20 } }} />

      <TextInput/>
      </View>
    );
  }
}

const styles = StyleSheet.create({
 container: {
    flex: 1,
    backgroundColor: '#b8b8b8',
  }
});
```

	Let's look at the **TextInput documentation**, the props that are available and how to use them.	Student refers to the **TextInput documentation.**

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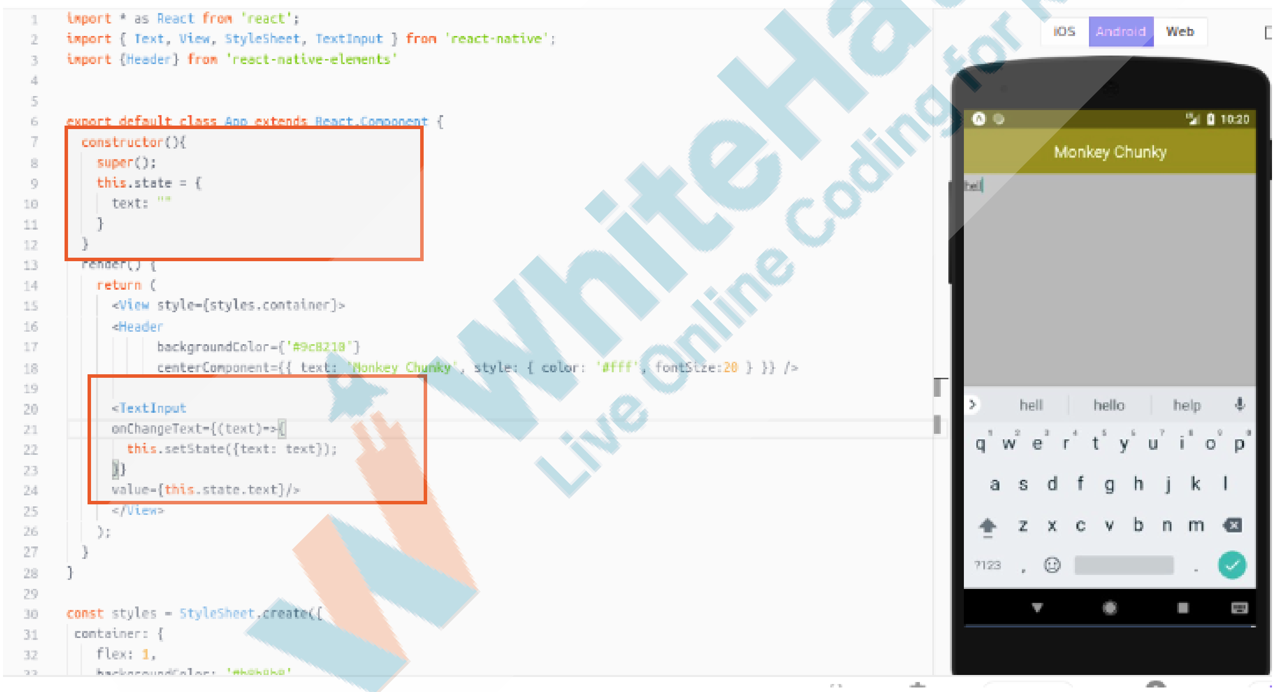
	TextInput takes the value which is passed on to the value prop. We have to create a state which constantly updates when the user types text as input. The value of 'TextInput' should be the same as 'text state'.	The student assigns some value to the 'TextInput' and sees the output on the screen. The student then creates a state called 'text'. He/She assigns the value of TextInput to the text state. On change of text, the student updates the text state.



```
import * as React from 'react';
import { Text, View, StyleSheet, TextInput } from 'react-native';
import {Header} from 'react-native-elements'


export default class App extends React.Component {
  constructor(){
    super();
    this.state = {
      text: ""
    }
  }
  render() {
    return (
      <View style={styles.container}>
      <Header
          backgroundColor={'#9c8210'}
          centerComponent={{ text: 'Monkey Chunky', style: { color: '#fff', fontSize:20 } }} />

      <TextInput
      onChangeText={(text)=>{
        this.setState({text: text});
      }}
      value={this.state.text}/>
      </View>
    );
  }
}

const styles = StyleSheet.create({
 container: {
   flex: 1,
   backgroundColor: '#b0b0b0'
```

	Let's add some styling to make it look like an Input Text Box.	The student adds styling to text input.

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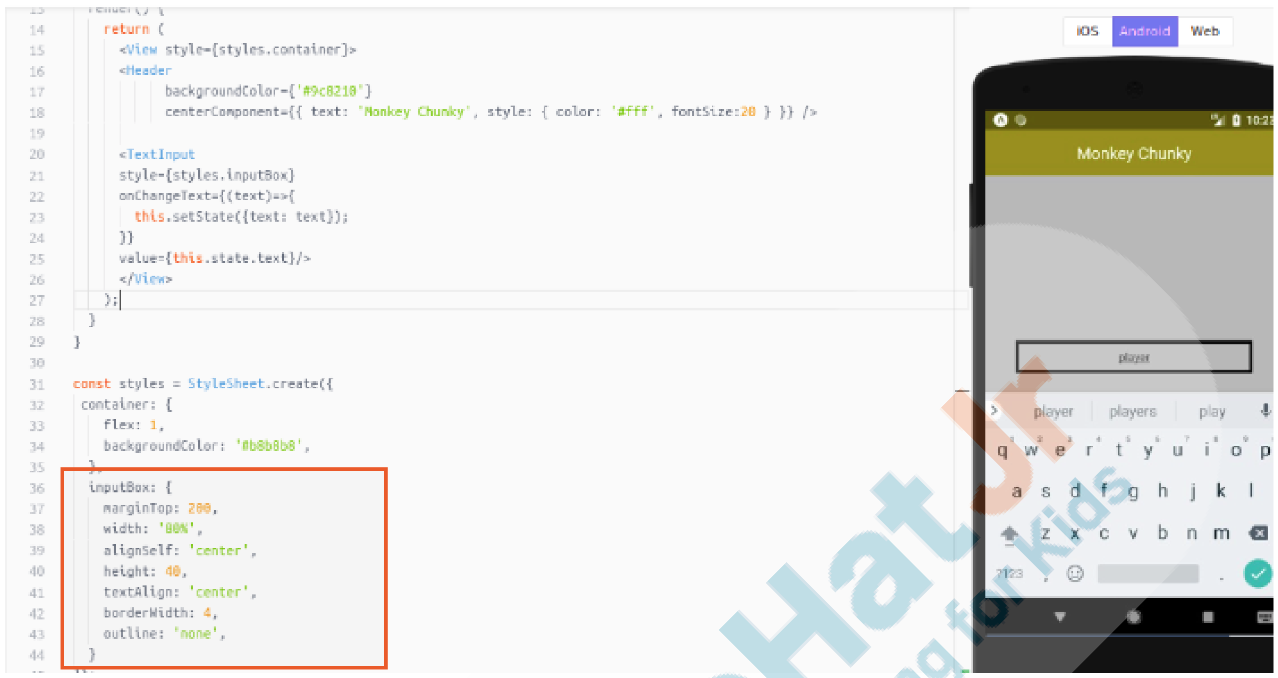
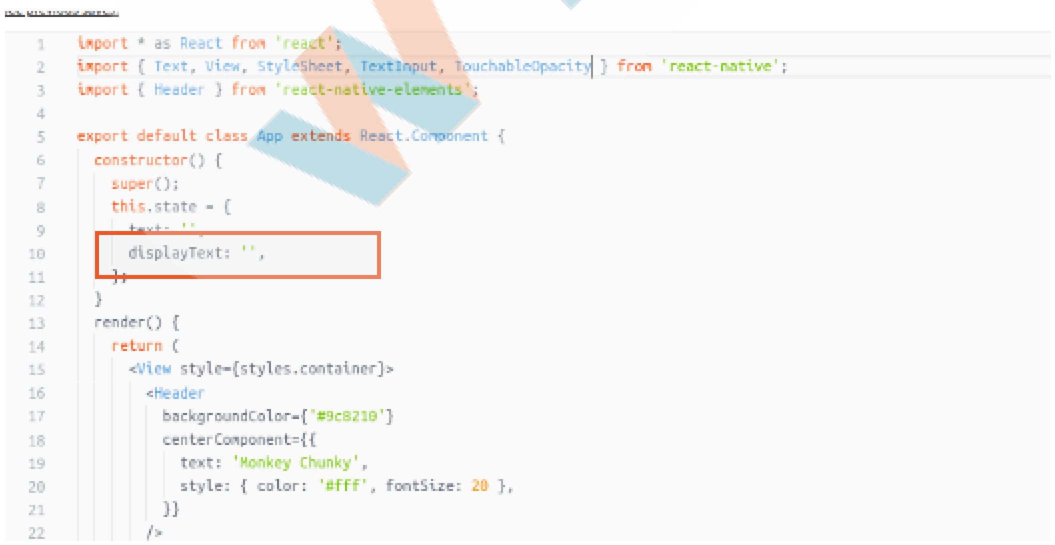


```
    return (
      <View style={styles.container}>
      <Header
            backgroundColor={'#9c8210'}
            centerComponent={{ text: 'Monkey Chunky', style: { color: '#fff', fontSize:20 } }} />

      <TextInput
      style={styles.inputBox}
      onChangeText={(text)=>{
        this.setState({text: text});
      }}
      value={this.state.text}/>
      </View>
    );
  }
}

const styles = StyleSheet.create({
  container: {
    flex: 1,
    backgroundColor: '#b8b8b8',
  },
  inputBox: {
    marginTop: 200,
    width: '80%',
    alignSelf: 'center',
    height: 40,
    textAlign: 'center',
    borderWidth: 4,
    outline: 'none',
  }
```

Let's try to render the typed text in 'TextInput' as a normal displayed Text when a button is pressed.

Let's create another state called 'displayText' which is to be displayed here.

The student renders a text component which displays a state called 'displayText'.



```
import * as React from 'react';
import { Text, View, StyleSheet, TextInput, TouchableOpacity } from 'react-native';
import { Header } from 'react-native-elements';

export default class App extends React.Component {
  constructor() {
    super();
    this.state = {
      text: '',
      displayText: '',
    };
  }
  render() {
    return (
      <View style={styles.container}>
        <Header
          backgroundColor={'#9c8210'}
          centerComponent={{
            text: 'Monkey Chunky',
            style: { color: '#fff', fontSize: 20 },
          }}
        />
```

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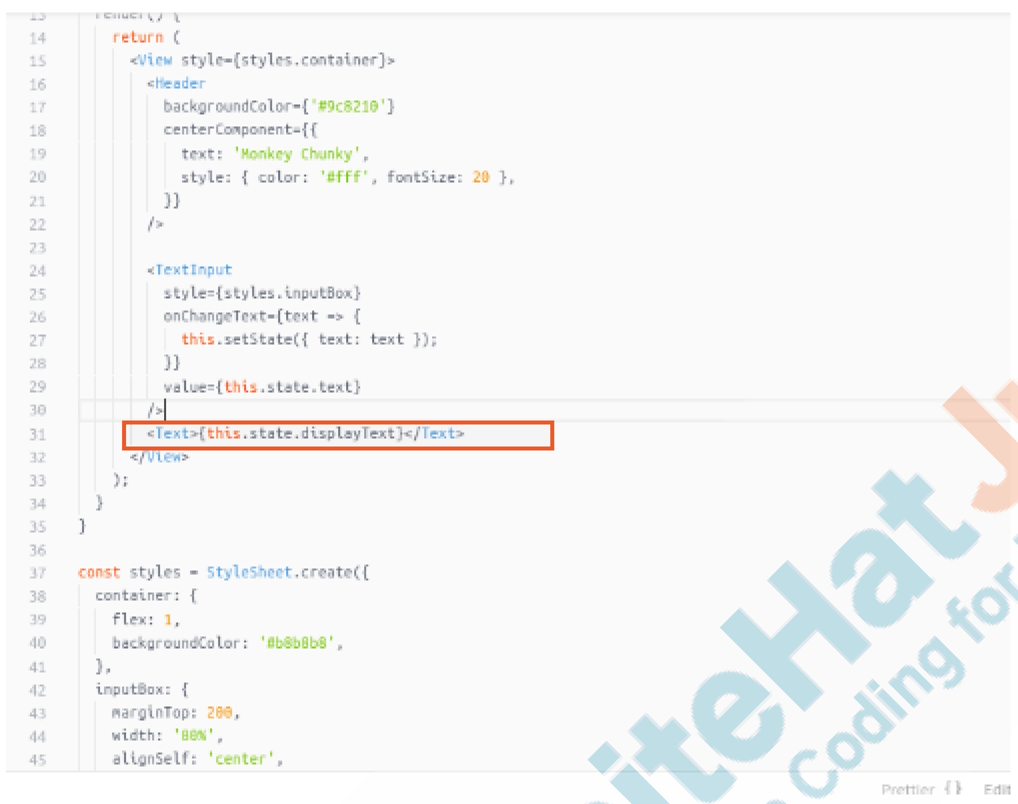

```
  render() {
    return (
      <View style={styles.container}>
        <Header
          backgroundColor={'#9c8210'}
          centerComponent={{
            text: 'Monkey Chunky',
            style: { color: '#fff', fontSize: 20 },
          }}
        />

        <TextInput
          style={styles.inputBox}
          onChangeText={text => {
            this.setState({ text: text });
          }}
          value={this.state.text}
        />
        <Text>{this.state.displayText}</Text>
      </View>
    );
  }
}

const styles = StyleSheet.create({
  container: {
    flex: 1,
    backgroundColor: '#b8b8b8',
  },
  inputBox: {
    marginTop: 200,
    width: '80%',
    alignSelf: 'center',
```

	Let's create a button called 'Go' button which updates 'displayText' to the same value as text when the user presses this button.	The student creates a button which when clicked updates the 'displayText' to 'text state'.

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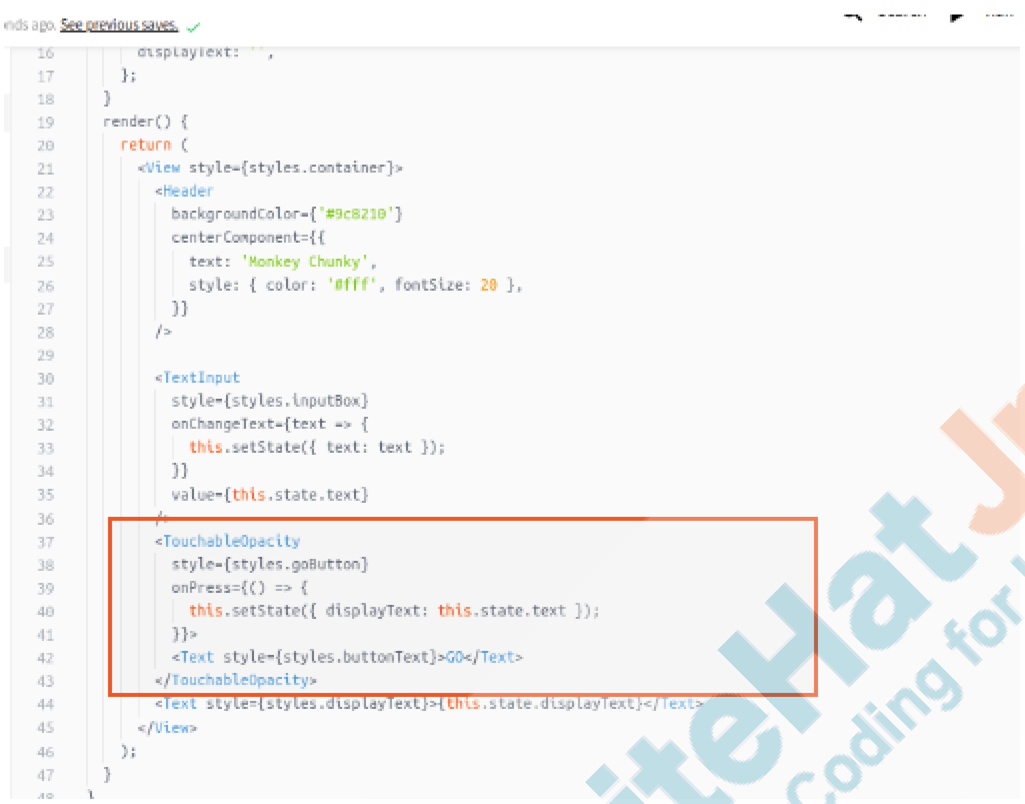
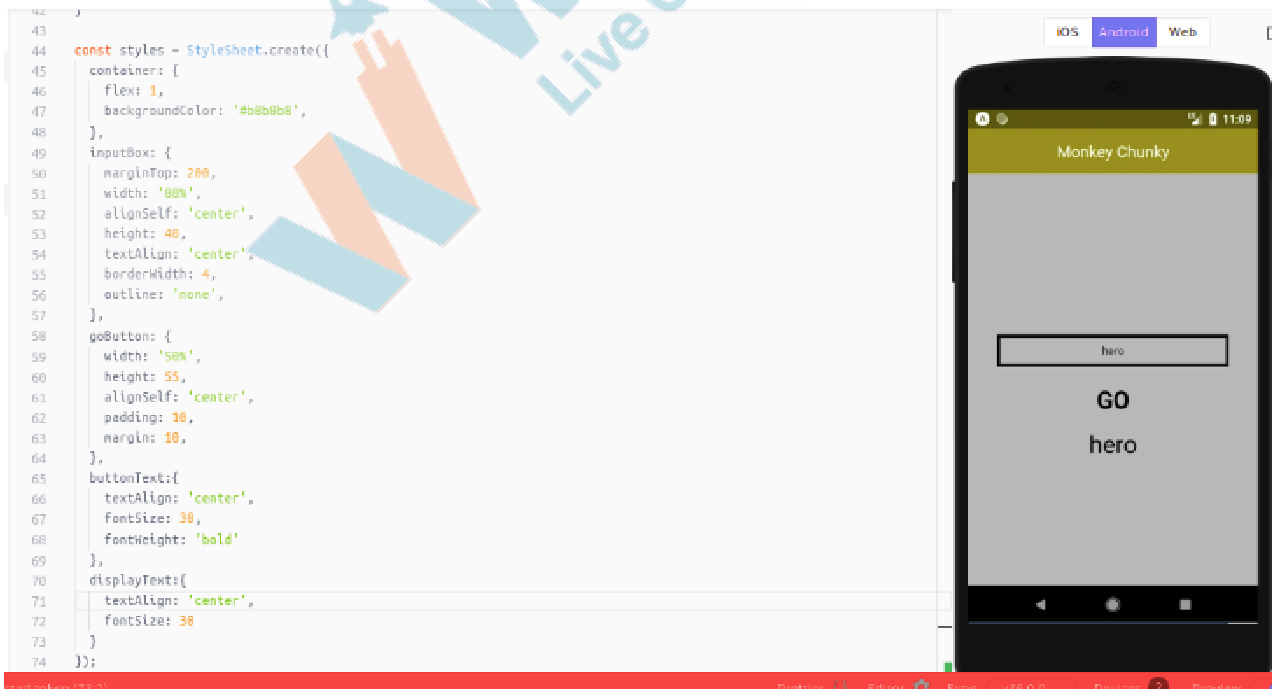


```
      displayText: '',
    };
  }
  render() {
    return (
      <View style={styles.container}>
        <Header
          backgroundColor={'#9c8210'}
          centerComponent={{
            text: 'Monkey Chunky',
            style: { color: '#fff', fontSize: 20 },
          }}
        />

        <TextInput
          style={styles.inputBox}
          onChangeText={text => {
            this.setState({ text: text });
          }}
          value={this.state.text}
        />
        <TouchableOpacity
          style={styles.goButton}
          onPress={() => {
            this.setState({ displayText: this.state.text });
          }}>
          <Text style={styles.buttonText}>GO</Text>
        </TouchableOpacity>
        <Text style={styles.displayText}>{this.state.displayText}</Text>
      </View>
    );
  }
```

	Let us add some styling to our buttons and 'displayText'.	The student adds styling to the button and 'displayText'.



```
const styles = StyleSheet.create({
  container: {
    flex: 1,
    backgroundColor: '#b8b8b8',
  },
  inputBox: {
    marginTop: 200,
    width: '80%',
    alignSelf: 'center',
    height: 40,
    textAlign: 'center',
    borderWidth: 4,
    outline: 'none',
  },
  goButton: {
    width: '50%',
    height: 55,
    alignSelf: 'center',
    padding: 10,
    margin: 10,
  },
  buttonText:{
    textAlign: 'center',
    fontSize: 30,
    fontWeight: 'bold'
  },
  displayText:{
    textAlign: 'center',
    fontSize: 30
  }
});
```

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Teacher Guides Student to Stop Screen Share	
WRAP-UP SESSION - 5 Mins	
Teacher starts slideshow from slide 15 to slide 25	
Activity details	**Solution/Guidelines**
Run the presentation from slide 15 to slide 25 **Following are the wrap-up session deliverables:** ● **Explain the facts and trivias** ● **Next class challenge** ● **Project for the day** ● **Additional Activity**	Guide the student to develop the project and share with us.
Quiz time - Click on in-class quiz	
Question	**Answer**
Each word in English is made up of a combination of 44 sounds and are known as ____. A. phonemes B. homophones C. heterophones D. phonetics	**A**
Which component helps us to take input from the user? A. input B. InputText C. text D. TextInput	**D**
TextInput component takes the value which is passed on to which of its props?	**B**

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A. style B. value C. selection D. placeholder		
End the quiz panel		
FEEDBACK ● **Encourage the student to explore more of React native documentation and work on the UI of the app.**		
Step 4: Wrap-Up (5 min)	Amazing work! We have text input which updates when the user types text. We are also rendering the typed text on the screen. In the next class, we will learn how to break the word into chunks and display it to the user. In the meantime, you can also give some thought to it.	The student listens and thinks about how to chunk the words in the app.
	You can also explore more components available under React native elements. You can add images using Image component in the Monkey-Chunky App to make it more attractive.	The student talks about exploring React Native elements and adding images to the Monkey-Chunky App.
	You get a “hats off”. Till next class then. See you. Bye!	Make sure you have given at least 2 Hats Off during the class for: Creatively Solved Activities +10

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Project Pointers and Cues (5 min)	*** This Project will take only 30 mins to complete. Motivate students to try and finish it immediately after the class.** DICTIONARY APP - ONLINE VERSION **Goal of the Project:** In class 63, you learned the use of TextInput instruction to collect text input from a user. You already know how to make API calls to API services in order to get data from them. You have to use these concepts to create **a simple pocket dictionary app** using which the user can find the definition and meaning of any word. **Story:** Sara and Josh are friends. They are participating in a treasure hunt where the hints are hidden in the meanings of different words. To win this game they definitely need a dictionary to solve the hidden clues. You have decided to help them by creating a Dictionary App. They can install it on their phones and use it while playing the game.	

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	I am very excited to see your project solution and I know you both will do really well. Bye Bye!	
Teacher Clicks ✖ End Class		
Teacher ends slideshow		
Additional Activities	Encourage the student to write reflection notes in their reflection journal using markdown. Use these as guiding questions: ● What happened today? - Describe what happened - Code I wrote ● How did I feel after the class? ● What have I learned about programming and developing games? ● What aspects of the class helped me? What did I find difficult?	The student uses the markdown editor to write her/his reflection in a reflection journal.

Activity	Activity Name	Links
Teacher Activity 1	Phonemes description	https://www.dvusd.org/cms/lib/AZ01901092/Centricity/Domain/3795/Sound_Spelling_Chart.pdf

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Teacher Activity 2	Phonemes video	https://www.youtube.com/watch?v=wBuA589kfMg
Teacher Activity 3	Class Activity	https://snack.expo.io/@rajeevtfi/monkey-chunky-stage-1
Teacher Activity 4	React native elements library	https://react-native-elements.github.io/react-native-elements/docs/overview.html
Teacher Activity 5	Text Input Documentation	https://facebook.github.io/react-native/docs/textinput
Teacher Activity 6	Reference link (Use Snack SDK Version 35.0.0 instead of 36.0.0 onwards)	https://snack.expo.io/@rajeevtfi/monkey-chunky-stage-1:-reference
Student Activity 1	Phonemes description	https://www.dvusd.org/cms/lib/AZ01901092/Centricity/Domain/3795/Sound_Spelling_Chart.pdf
Student Activity 2	Phonemes video	https://www.youtube.com/watch?v=wBuA589kfMg
Student Activity 3	Class Activity (Use Snack SDK Version 35.0.0 instead of 36.0.0 onwards)	https://snack.expo.io/@rajeevtfi/monkey-chunky-stage-1
Student Activity 4	React native elements library	https://react-native-elements.github.io/react-native-elements/docs/overview.html
Student Activity 5	Text Input Documentation	https://facebook.github.io/react-nativ

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		e/docs/textinput
Project Solution	Dictionary App-Online Version	https://github.com/priyapandey2020/aaab251f19dfa78857b6b44544527587
Teacher Reference visual aid link	Visual aid link	https://curriculum.whitehatjr.com/Visual+Project+Asset/PRO_VD/BJFC_PRO_V3_C63_withcues.html
Teacher Reference In-class quiz	In-class quiz	https://s3-whjr-curriculum-uploads.whjr.online/8c25669a-2336-44b6-9fdb-697bf256d08b.pdf

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