National University of Sciences and Technology (NUST)
School of Electrical Engineering and Computer Science

Department of Computing

CS-213: Advanced Programming

Class: BSCS 7AB

Lab 11: React Native Calculator Application

Date: 05 December, 2019

Time: 10:00-01:00pm & 02:00-05:00pm

Umaid Zaffar

237560

BSCS 7B

Instructor: Dr. Sidra Sultana

Lab Engineer: Ms. Ayesha Asif

Lab 11: React Native Calculator Application

Introduction

React Native combines the best parts of native development with React, a best-in-class JavaScript library for building user interfaces.

Objectives

This lab will get students familiar with the React Native application Development.

Tools/Software Requirement

React native, Android Studio, JDK, node JS

Description

Reference Videos

https://www.youtube.com/watch?v=TkYTPSVvMaM&list=PLYxzS__5yYQlHANFLwcsSzt3elIbYTG1h&index=11
https://www.youtube.com/watch?v=f3K2QuFH9yc&list=PLYxzS__5yYQlHANFLwcsSzt3elIbYTG1h&index=12
https://www.youtube.com/watch?v=487ec0OCppw&list=PLYxzS__5yYQlHANFLwcsSzt3elIbYTG1h&index=13
https://www.youtube.com/watch?v=8PVWlBwiegY&list=PLYxzS__5yYQlHANFLwcsSzt3elIbYTG1h&index=14
https://www.youtube.com/watch?v=4vRTFKI4ZS8&list=PLYxzS__5yYQlHANFLwcsSzt3elIbYTG1h&index=15
https://www.youtube.com/watch?v=8bhKXfEpyEw&list=PLYxzS__5yYQlHANFLwcsSzt3elIbYTG1h&index=16
https://www.youtube.com/watch?v=I-aeTW40yls&list=PLYxzS__5yYQlHANFLwcsSzt3elIbYTG1h&index=17
https://www.youtube.com/watch?v=YTkzfdyxNbM&list=PLYxzS__5yYQlHANFLwcsSzt3elIbYTG1h&index=18

Lab Task

Create a basic calculator app in react native

Solution

Task Code:

```
import React, { Component } from "react";
import {
```

```
StyleSheet,
Text,
View,
TextInput,
Button,
TouchableOpacity
} from "react-native";

class App extends Component {
constructor() {
super();
this.state = {
resultText: "",
calculationText: ""
};
this.operations = ["DEL", "+", "-", "*", "/"];
}

calculationResult() {
const text = this.state.resultText;
this.setState({
calculationText: eval(text)
});
}

validate() {
const text = this.state.resultText;
switch (text.slice(-1)) {
case "+":

case "-":

case "*":

case "/":
return false;
}
return true;
}

_onPressButton(text) {
console.log(text);
```

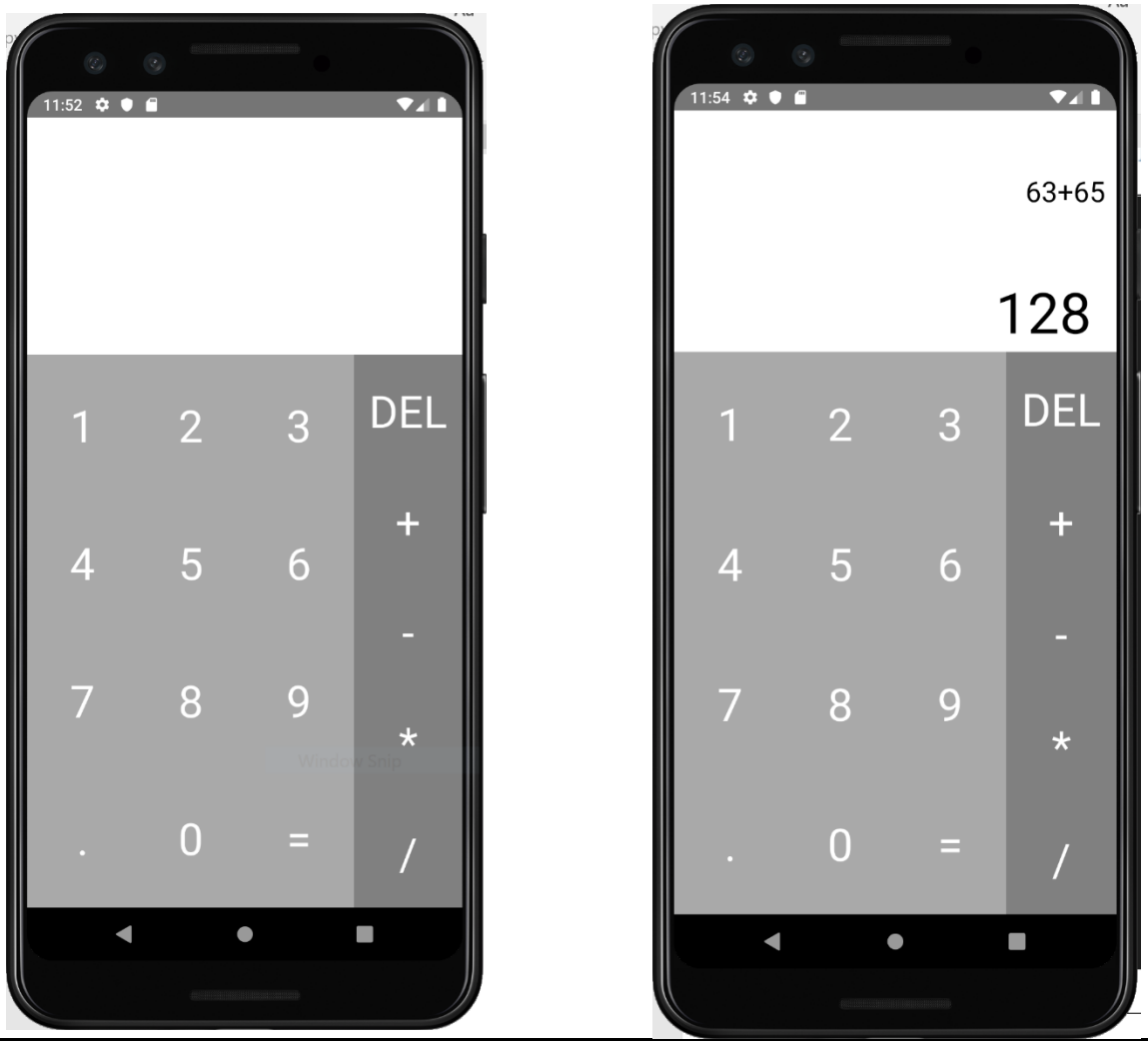
```
if (text == "=") {
return this.validate() && this.calculationResult(this.state.resultText);
}

this.setState({
resultText: this.state.resultText + text
});
}

operate(operation) {
switch (operation) {
case "DEL":
console.log(this.state.resultText);
let text = this.state.resultText.split("");
text.pop();
this.setState({
resultText: text.join("")
});
break;
case "+":

case "-":

case "*":

case "/":
const lastChar = this.state.resultText.split("").pop();

if (this.operations.indexOf(lastChar) > 0) return;

if (this.state.text == "") return;
this.setState({
resultText: this.state.resultText + operation
});
}
}

render() {
let rows = [];
let nums = [[1, 2, 3], [4, 5, 6], [7, 8, 9], [".", 0, "="]];
for (let i = 0; i < 4; i++) {
let row = [];
for (let j = 0; j < 3; j++) {
```

```
row.push(
<TouchableOpacity
key={nums[i][j]}
style={styles.btn}
onPress={() => this._onPressButton(nums[i][j])}
>
<Text style={styles.btnText}>{nums[i][j]}</Text>
</TouchableOpacity>
);
}
rows.push(
<View key={i} style={styles.row}>
{row}
</View>
);
}

let ops = [];
for (let i = 0; i < 5; i++) {
ops.push(
<TouchableOpacity
key={this.operations[i]}
style={styles.btn}
onPress={() => this.operate(this.operations[i])}
>
<Text style={[styles.btnText, styles.white]}>
{this.operations[i]}
</Text>
</TouchableOpacity>
);
}

return (
<View style={styles.container}>
<View style={styles.result}>
<Text style={styles.resultText}>{this.state.resultText}</Text>
</View>
<View style={styles.calculation}>
<Text style={styles.calculationText}>
{this.state.calculationText}{" "}
</Text>
</View>
<View style={styles.buttons}>
```

```
<View style={styles.numbers}>{rows}</View>
<View style={styles.operations}>{ops}</View>
</View>
</View>
);
}
}

const styles = StyleSheet.create({
container: {
flex: 1
},
row: {
flexDirection: "row",
flex: 1,
justifyContent: "space-around",
alignItems: "stretch"
},
resultText: {
fontSize: 25,
paddingRight: 10,
color: "black"
},
btnText: {
fontSize: 40,
color: "white"
},
white: {
color: "white"
},
btn: {
flex: 1,
alignItems: "center",
alignSelf: "stretch",
justifyContent: "center"
},
devider: {
borderRightColor: "yellow",
borderBottomColor: "yellow",
borderRightWidth: 0.5,
borderBottomWidth: 0.5
},
result: {
```

```
flex: 2,
backgroundColor: "white",
justifyContent: "center",
alignItems: "flex-end"
},
calculation: {
flex: 1,
backgroundColor: "white",
justifyContent: "center",
alignItems: "flex-end"
},
calculationText: {
fontSize: 50,
paddingRight: 10,
color: "black"
},
buttons: {
flex: 7,
flexDirection: "row"
},
numbers: {
flex: 3,
padding: 1,
backgroundColor: "steelgrey"
},
operations: {
flex: 1,
justifyContent: "space-around",
alignItems: "stretch",
backgroundColor: "grey"
}
});
export default App;
```

Task Output Screenshot:



Deliverable

Compile a single word document by filling in the solution part and submit this Word file on LMS. This lab grading policy is as follows: The lab is graded between 0 to 10 marks. The submitted solution can get a maximum of 5 marks. At the end of each lab or in the next lab, there will be a viva/quiz related to the tasks. You must show the implementation of the tasks in the designing tool, along with your complete Word document to get your work graded. You must also submit this Word document on the LMS. In case of any problems with submissions on LMS, submit your Lab assignments by emailing it to Ms. Ayesha Asif: ayesha.asif@seecs.edu.pk.