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Roll no: 59
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St. Francis Institute of Technology, Mumbai-400 103

Department of Information Technology

A.Y. 2021-2022
Class: TE-ITA/B, Semester: VI

Subject: **MAD & PWA LAB**

Experiment – 3: Creation of Forms for mobile Apps.

1. **Aim:** To create interactive form using form widget

2. **Objectives:** After study of this experiment, the student will be able to
   - Develop the App UI by incorporating form widget

3. **Outcomes:** After study of this experiment, the student will be able to
   - Design and Develop interactive Flutter App by using widgets (L604.2)

4. **Prerequisite:** Dart Programming Language

5. **Requirements:** Android Studio, Flutter framework, Internet Connection.

6. **Pre-Experiment Exercise:**
   Brief Theory:
   - The Form widget is an optional container for grouping together multiple form field widgets.
   - The benefit of using a Form widget is to validate each text field as a group.
   - You can group TextFormField widgets to manually or automatically validate them.
   - The TextFormField widget wraps a TextField widget to provide validation when enclosed in a Form widget.
   - If all text fields pass the FormState validate method, then it returns true. If any text fields contain errors, it displays the appropriate error message for each text field, and the FormState validate method returns false. This process gives you the ability to use FormState to check for any validation errors instead of checking each text field for errors and not allowing the posting of invalid data.
   - The Form widget needs a unique key to identify it and is created by using GlobalKey. This GlobalKey value is unique across the entire app.
   - We can create and validate a form using the following steps:
     1. Create a Form with a GlobalKey.
     2. Add a TextFormField with validation logic.
     3. Create a button to validate and submit the form.

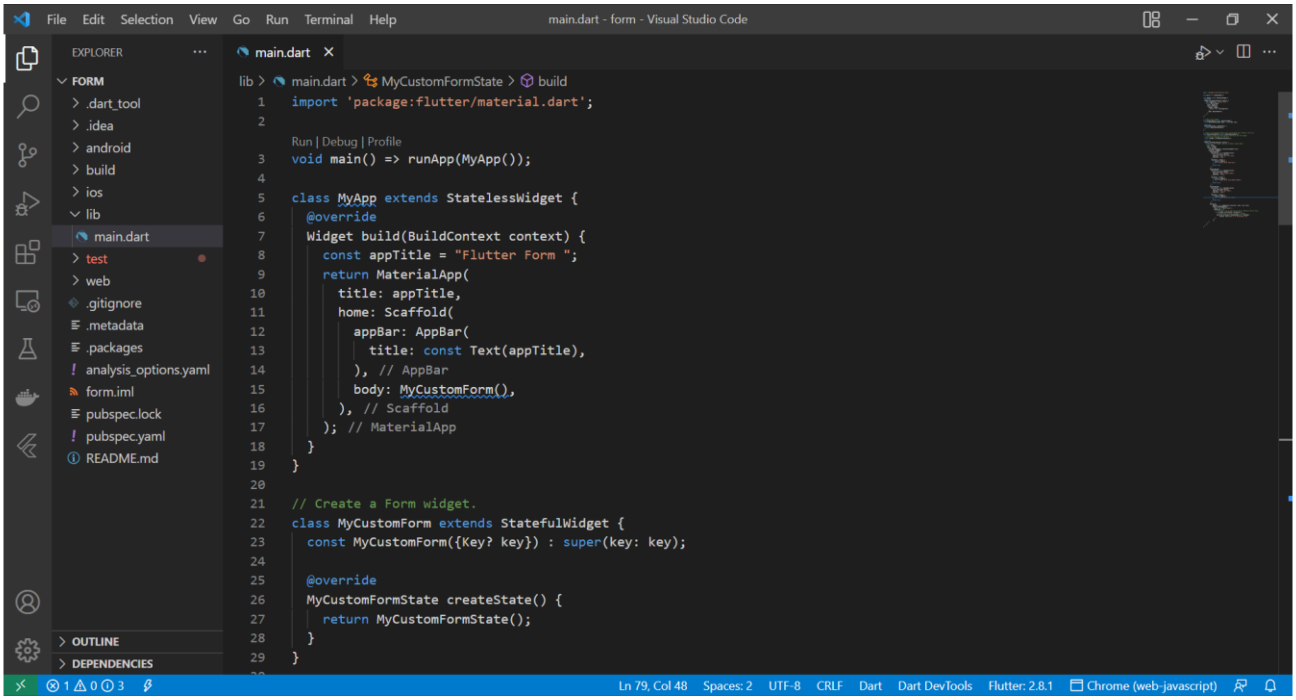
7. Laboratory Exercise

A. Program

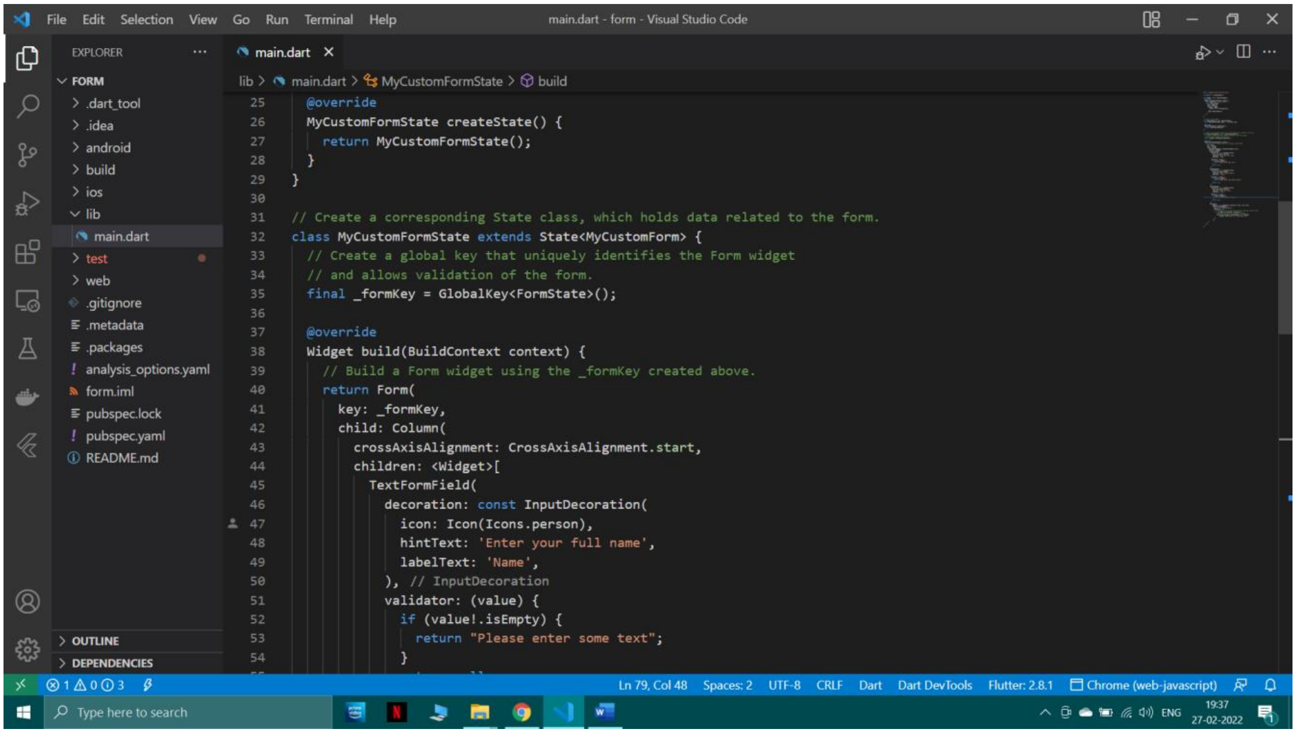
i. Create a form for the mobile app having two text fields: person's name and contact number. The form should be able to accept the input when the user submits the form. Also validate the form for null values and display appropriate messages.

B. Result/Observation

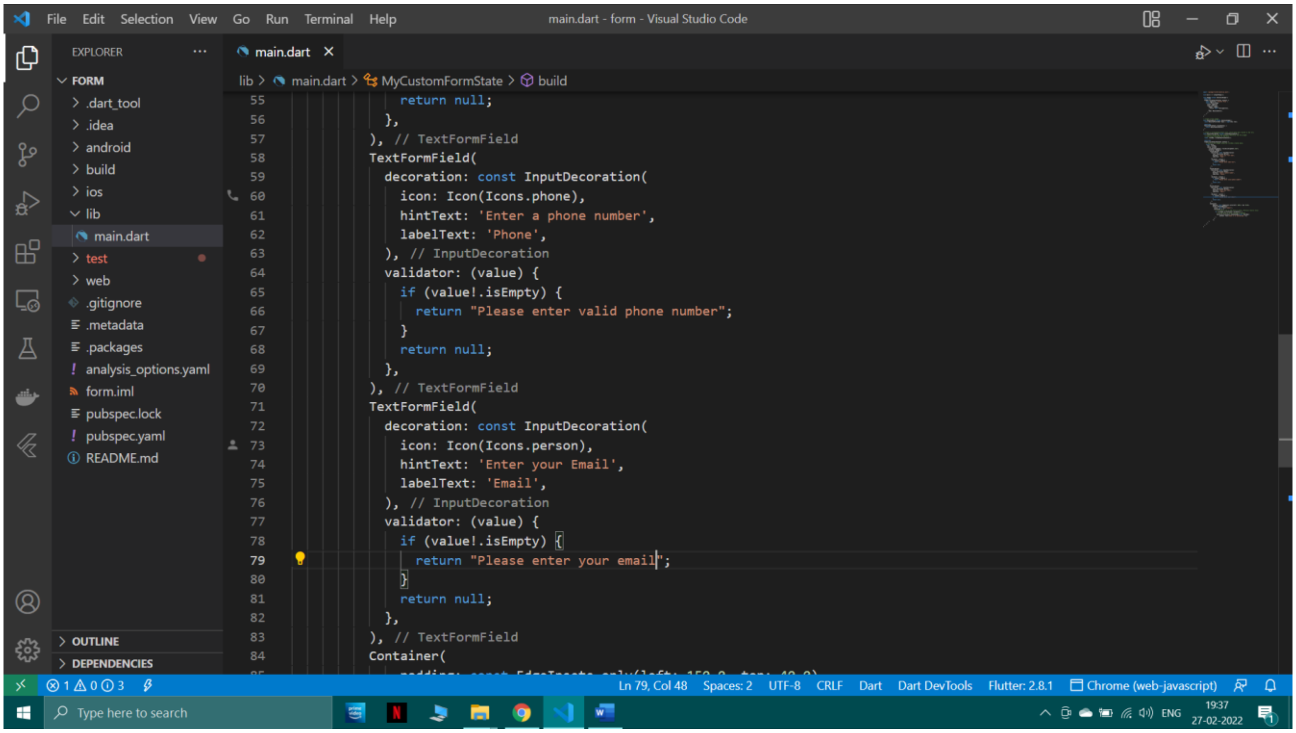
i. Print out of program code and output.



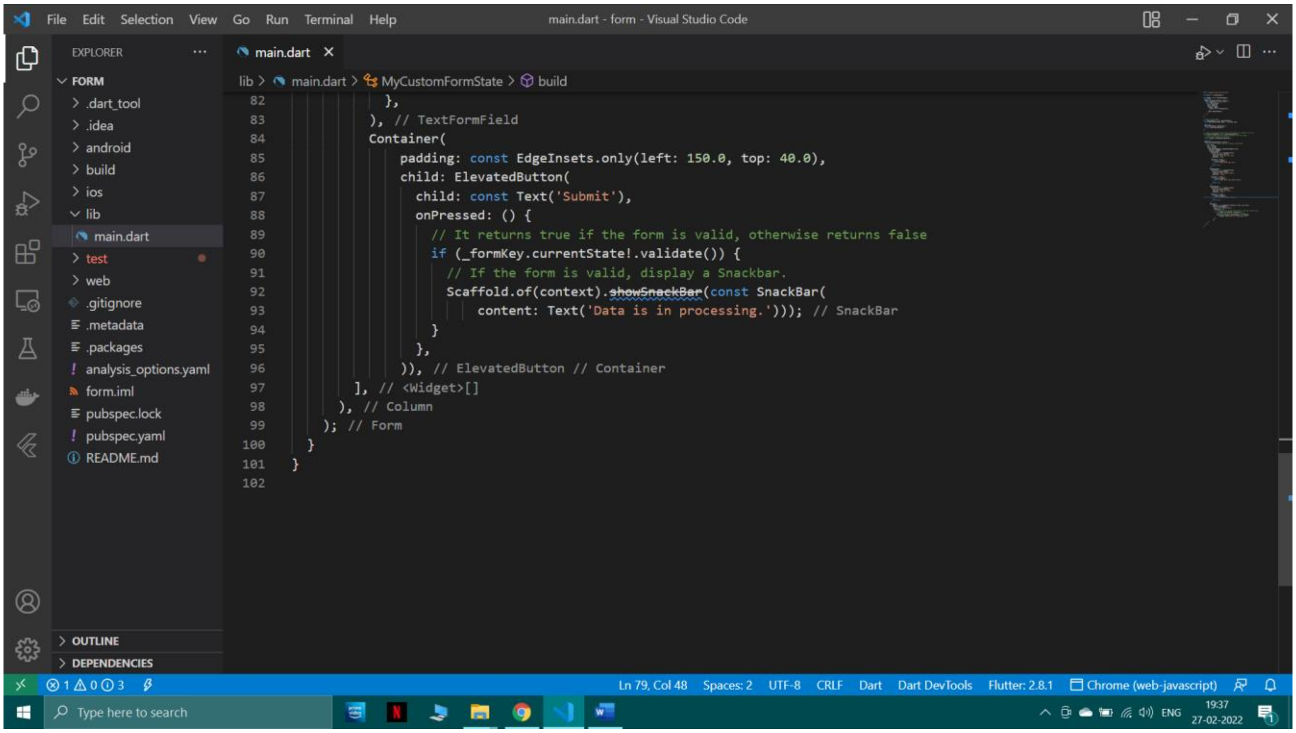
```dart
import 'package:flutter/material.dart';

void main() => runApp(MyApp());

class MyApp extends StatelessWidget {
  @override
  Widget build(BuildContext context) {
    const appTitle = "Flutter Form ";
    return MaterialApp(
      title: appTitle,
      home: Scaffold(
        appBar: AppBar(
          title: const Text(appTitle),
        ), // AppBar
        body: MyCustomForm(),
      ), // Scaffold
    ); // MaterialApp
  }
}

// Create a Form widget.
class MyCustomForm extends StatefulWidget {
  const MyCustomForm({Key? key}) : super(key: key);

  @override
  MyCustomFormState createState() {
    return MyCustomFormState();
  }
}
```



```dart
  @override
  MyCustomFormState createState() {
    return MyCustomFormState();
  }
}

// Create a corresponding State class, which holds data related to the form.
class MyCustomFormState extends State<MyCustomForm> {
  // Create a global key that uniquely identifies the Form widget
  // and allows validation of the form.
  final _formKey = GlobalKey<FormState>();

  @override
  Widget build(BuildContext context) {
    // Build a Form widget using the _formKey created above.
    return Form(
      key: _formKey,
      child: Column(
        crossAxisAlignment: CrossAxisAlignment.start,
        children: <Widget>[
          TextFormField(
            decoration: const InputDecoration(
              icon: Icon(Icons.person),
              hintText: 'Enter your full name',
              labelText: 'Name',
            ), // InputDecoration
            validator: (value) {
              if (value!.isEmpty) {
                return "Please enter some text";
              }
```


File Edit Selection View Go Run Terminal Help
main.dart - form - Visual Studio Code
EXPLORER
main.dart
lib > main.dart > MyCustomFormState > build
FORM
.dart_tool
.idea
android
build
ios
lib
main.dart
test
web
.gitignore
.metadata
.packages
analysis_options.yaml
form.iml
pubspec.lock
pubspec.yaml
README.md
OUTLINE
DEPENDENCIES
Ln 79, Col 48 Spaces: 2 UTF-8 CRLF Dart Dart DevTools Flutter: 2.8.1 Chrome (web-javascript)
Type here to search
19:37
27-02-2022

```
              return null;
            },
          ), // TextFormField
          TextFormField(
            decoration: const InputDecoration(
              icon: Icon(Icons.phone),
              hintText: 'Enter a phone number',
              labelText: 'Phone',
            ), // InputDecoration
            validator: (value) {
              if (value!.isEmpty) {
                return "Please enter valid phone number";
              }
              return null;
            },
          ), // TextFormField
          TextFormField(
            decoration: const InputDecoration(
              icon: Icon(Icons.person),
              hintText: 'Enter your Email',
              labelText: 'Email',
            ), // InputDecoration
            validator: (value) {
              if (value!.isEmpty) {
                return "Please enter your email";
              }
              return null;
            },
          ), // TextFormField
          Container(
```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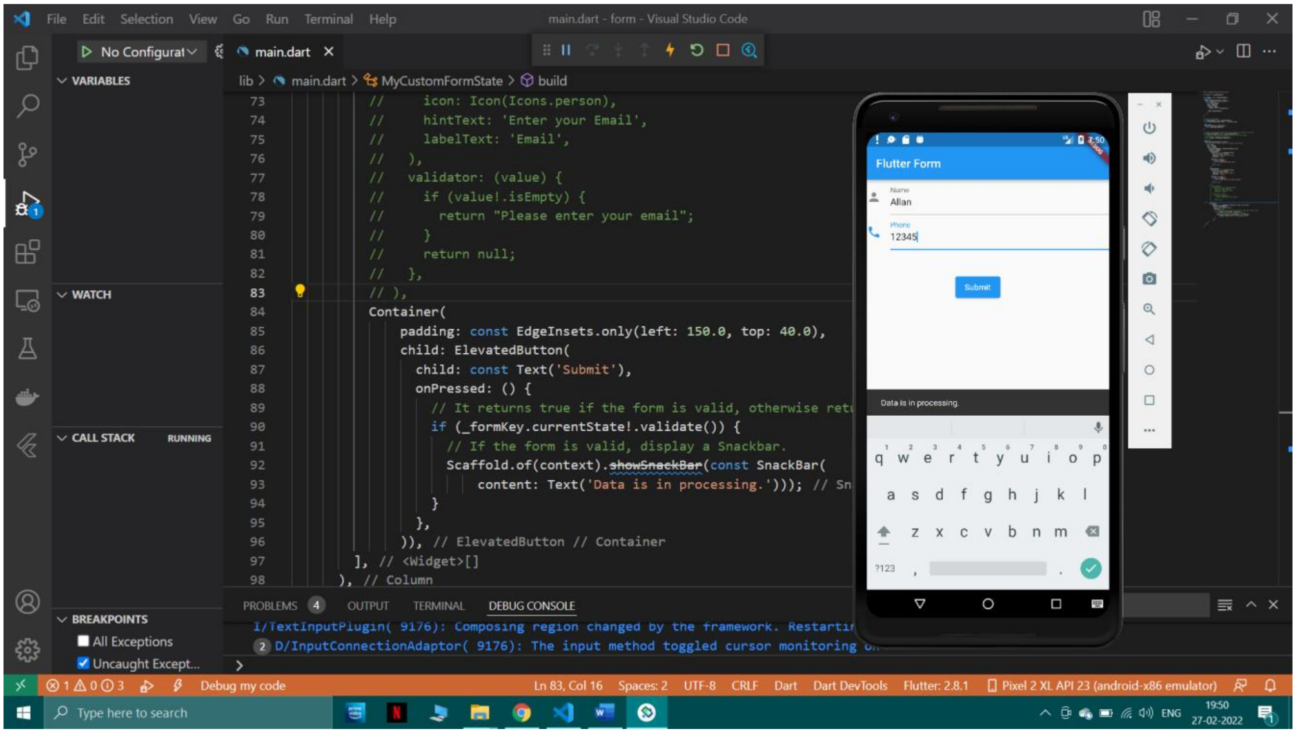
```
            },
          ), // TextFormField
          Container(
              padding: const EdgeInsets.only(left: 150.0, top: 40.0),
              child: ElevatedButton(
                child: const Text('Submit'),
                onPressed: () {
                  // It returns true if the form is valid, otherwise returns false
                  if (_formKey.currentState!.validate()) {
                    // If the form is valid, display a Snackbar.
                    Scaffold.of(context).showSnackBar(const SnackBar(
                        content: Text('Data is in processing.'))); // SnackBar
                  }
                },
              )), // ElevatedButton // Container
        ], // <Widget>[]
      ), // Column
    ); // Form
  }
}
```



```
                //     icon: Icon(Icons.person),
                //     hintText: 'Enter your Email',
                //     labelText: 'Email',
                //   ),
                //   validator: (value) {
                //     if (value!.isEmpty) {
                //       return "Please enter your email";
                //     }
                //     return null;
                //   },
                // ),
                Container(
                    padding: const EdgeInsets.only(left: 150.0, top: 40.0),
                    child: ElevatedButton(
                      child: const Text('Submit'),
                      onPressed: () {
                        // It returns true if the form is valid, otherwise retu
                        if (_formKey.currentState!.validate()) {
                          // If the form is valid, display a Snackbar.
                          Scaffold.of(context).~~showSnackBar~~(const SnackBar(
                              content: Text('Data is in processing.'))); // Sn
                        }
                      },
                    )), // ElevatedButton // Container
              ], // <Widget>[]
            ), // Column
```

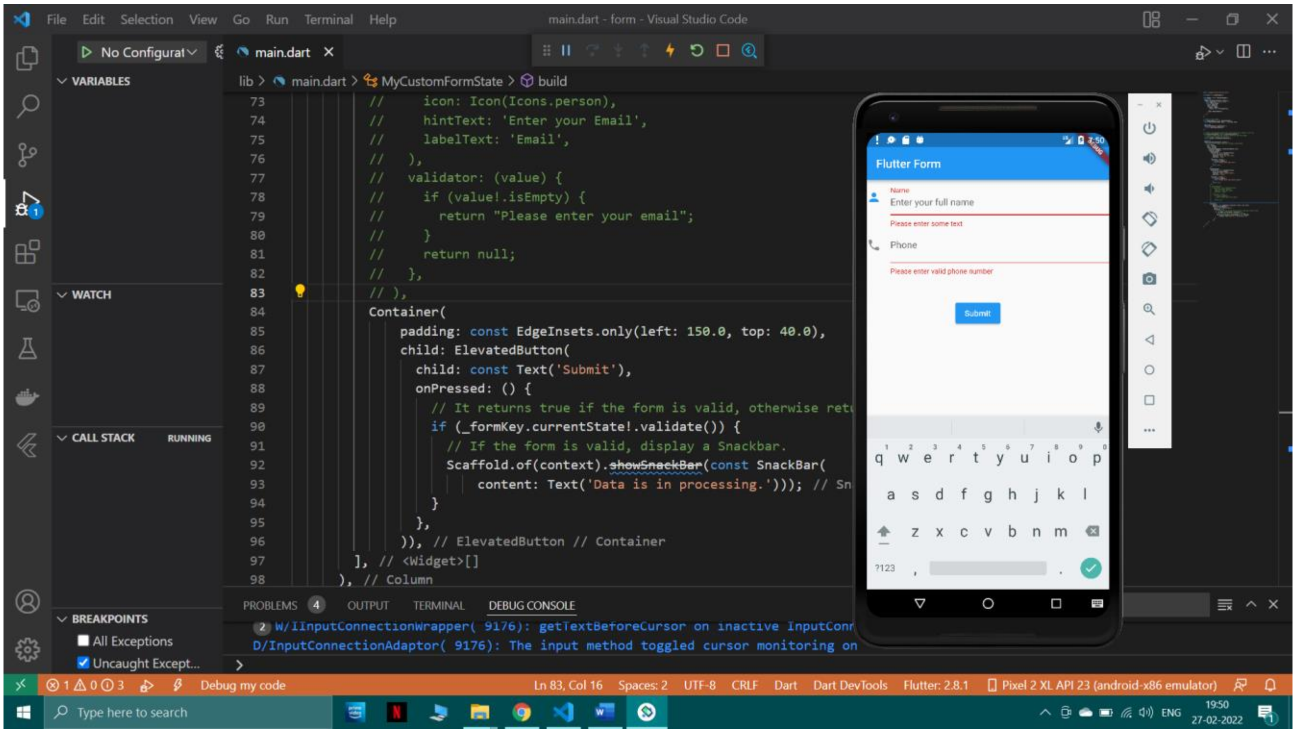
```
I/TextInputPlugin( 9176): Composing region changed by the framework. Restartin
2 D/InputConnectionAdaptor( 9176): The input method toggled cursor monitoring on
```

Flutter Form

Name: Allan

Phone: 12345

Data is in processing.



```
                //     icon: Icon(Icons.person),
                //     hintText: 'Enter your Email',
                //     labelText: 'Email',
                //   ),
                //   validator: (value) {
                //     if (value!.isEmpty) {
                //       return "Please enter your email";
                //     }
                //     return null;
                //   },
                // ),
                Container(
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                              content: Text('Data is in processing.'))); // Sn
                        }
                      },
                    )), // ElevatedButton // Container
              ], // <Widget>[]
            ), // Column
```

```
2 W/IInputConnectionWrapper( 9176): getTextBeforeCursor on inactive InputConn
D/InputConnectionAdaptor( 9176): The input method toggled cursor monitoring on
```

Flutter Form

Name: Enter your full name

Please enter some text

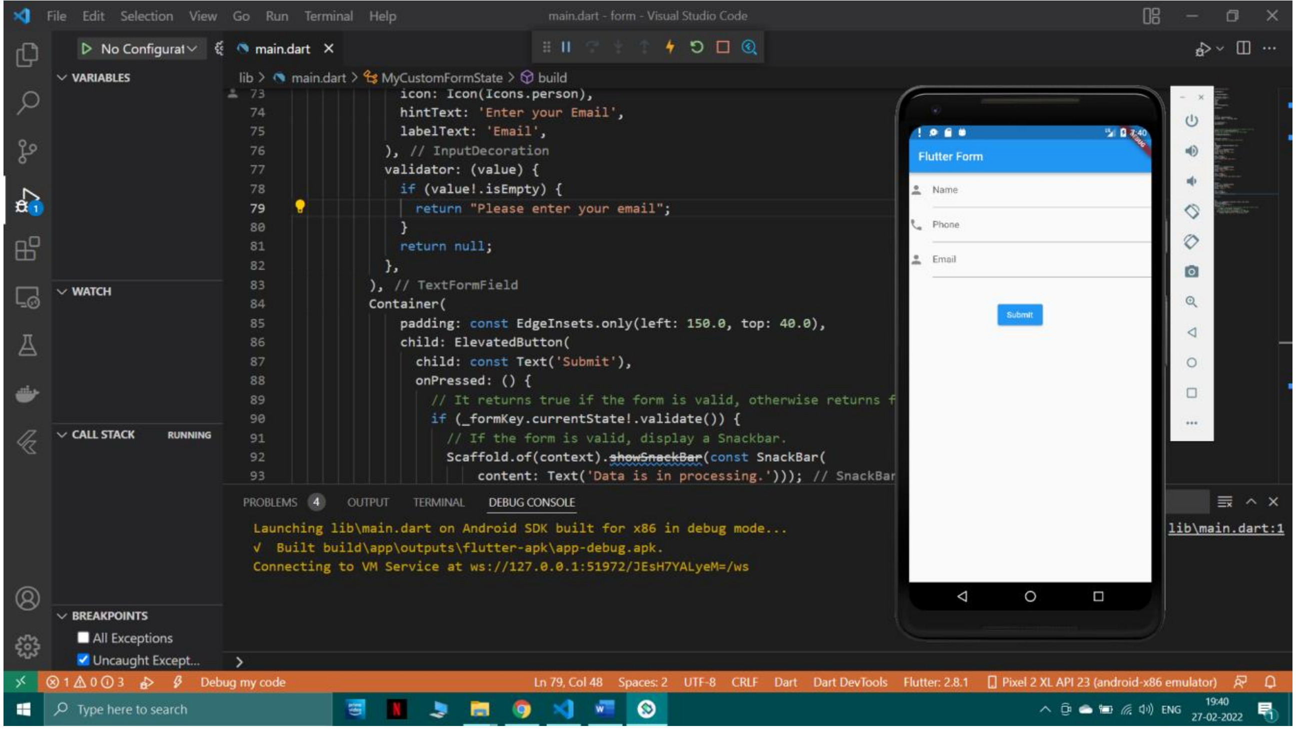
Phone

Please enter valid phone number

8. Post-Experiments Exercise

A. Questions:

1 Add one more text field along with validation, and show the output. Also validate the ‘phone number’ field to ensure that only numeric value is accepted in the ‘phone number’ field.


main.dart - form - Visual Studio Code
lib > main.dart > MyCustomFormState > build
Flutter Form
Name
Phone
Email
Submit

```
              icon: Icon(Icons.person),
              hintText: 'Enter your Email',
              labelText: 'Email',
            ), // InputDecoration
            validator: (value) {
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              return null;
            },
          ), // TextFormField
          Container(
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                    Scaffold.of(context).showSnackBar(const SnackBar(
                        content: Text('Data is in processing.'))); // SnackBar
```
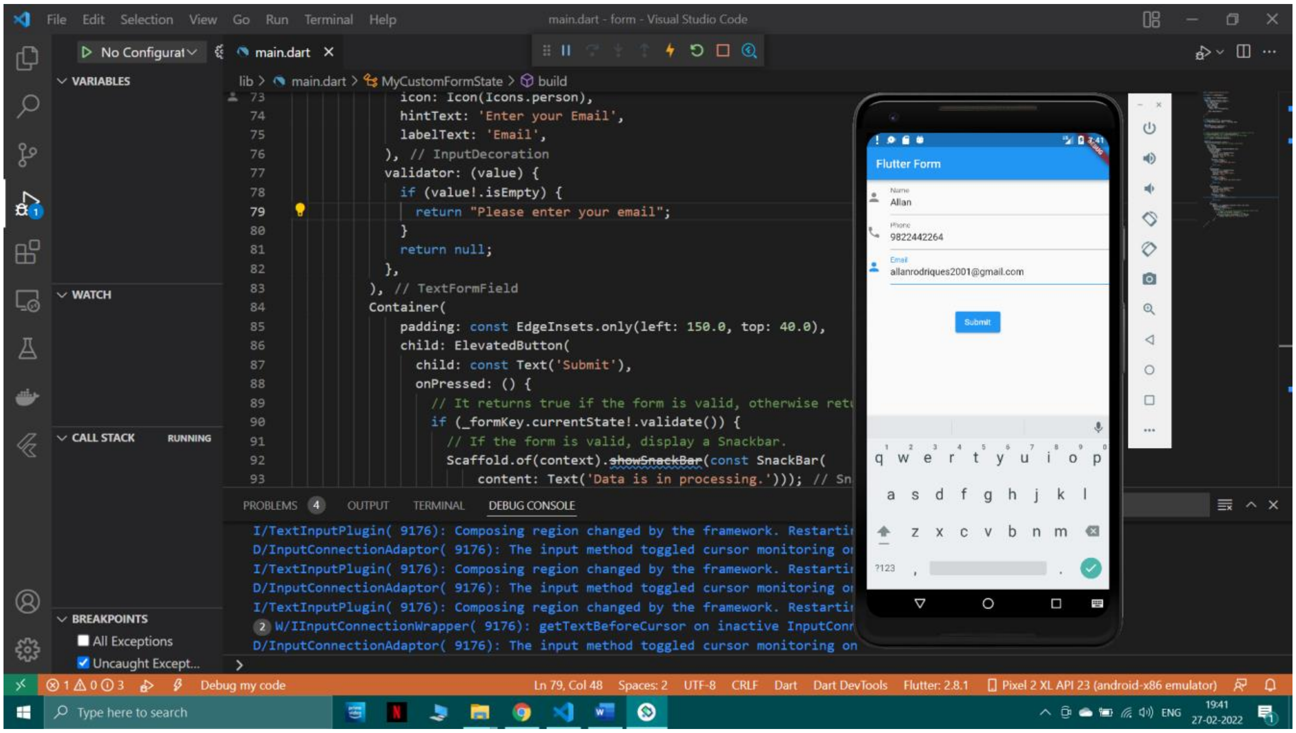

```
Launching lib\main.dart on Android SDK built for x86 in debug mode...
√  Built build\app\outputs\flutter-apk\app-debug.apk.
Connecting to VM Service at ws://127.0.0.1:51972/JEsH7YALyeM=/ws
```


main.dart - form - Visual Studio Code
lib > main.dart > MyCustomFormState > build
Flutter Form
Submit

Name
Allan

Phone
9822442264

Email
allanrodriques2001@gmail.com

```
              icon: Icon(Icons.person),
              hintText: 'Enter your Email',
              labelText: 'Email',
            ), // InputDecoration
            validator: (value) {
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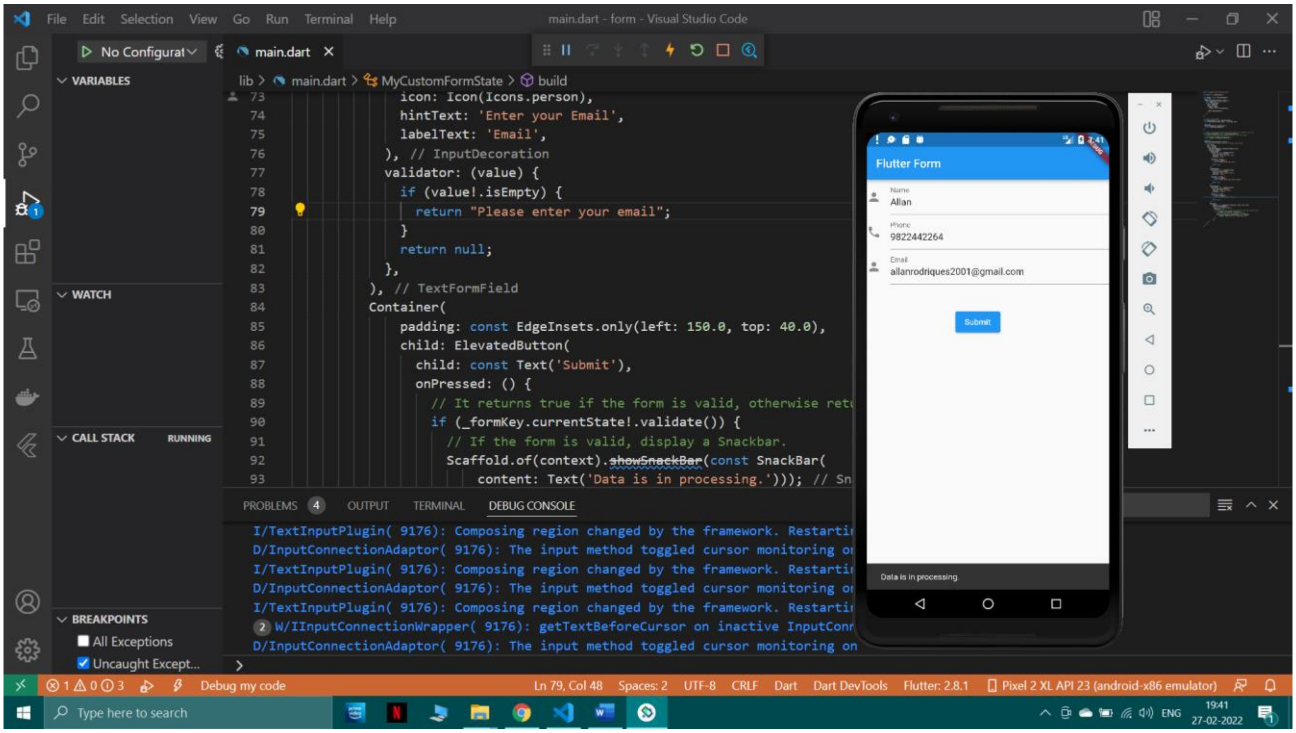

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                icon: Icon(Icons.person),
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D/InputConnectionAdaptor( 9176): The input method toggled cursor monitoring on
```

Flutter Form

Name: Allan

Phone: 9822442264

Email: allanrodriques2001@gmail.com

Submit

Data is in processing.

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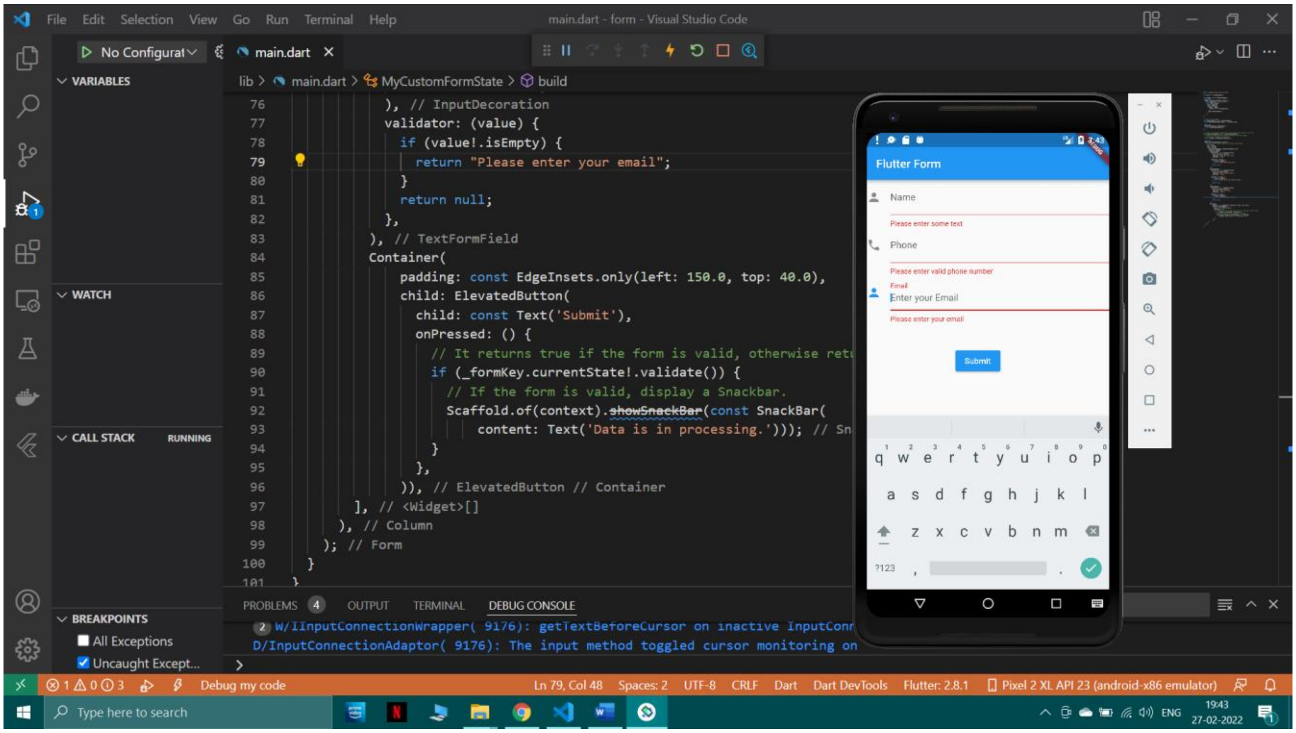

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                  child: const Text('Submit'),
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          ], // <Widget>[]
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      ); // Form
    }
  }
```

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```

Flutter Form

Name

Please enter some text

Phone

Please enter valid phone number

Email: Enter your Email

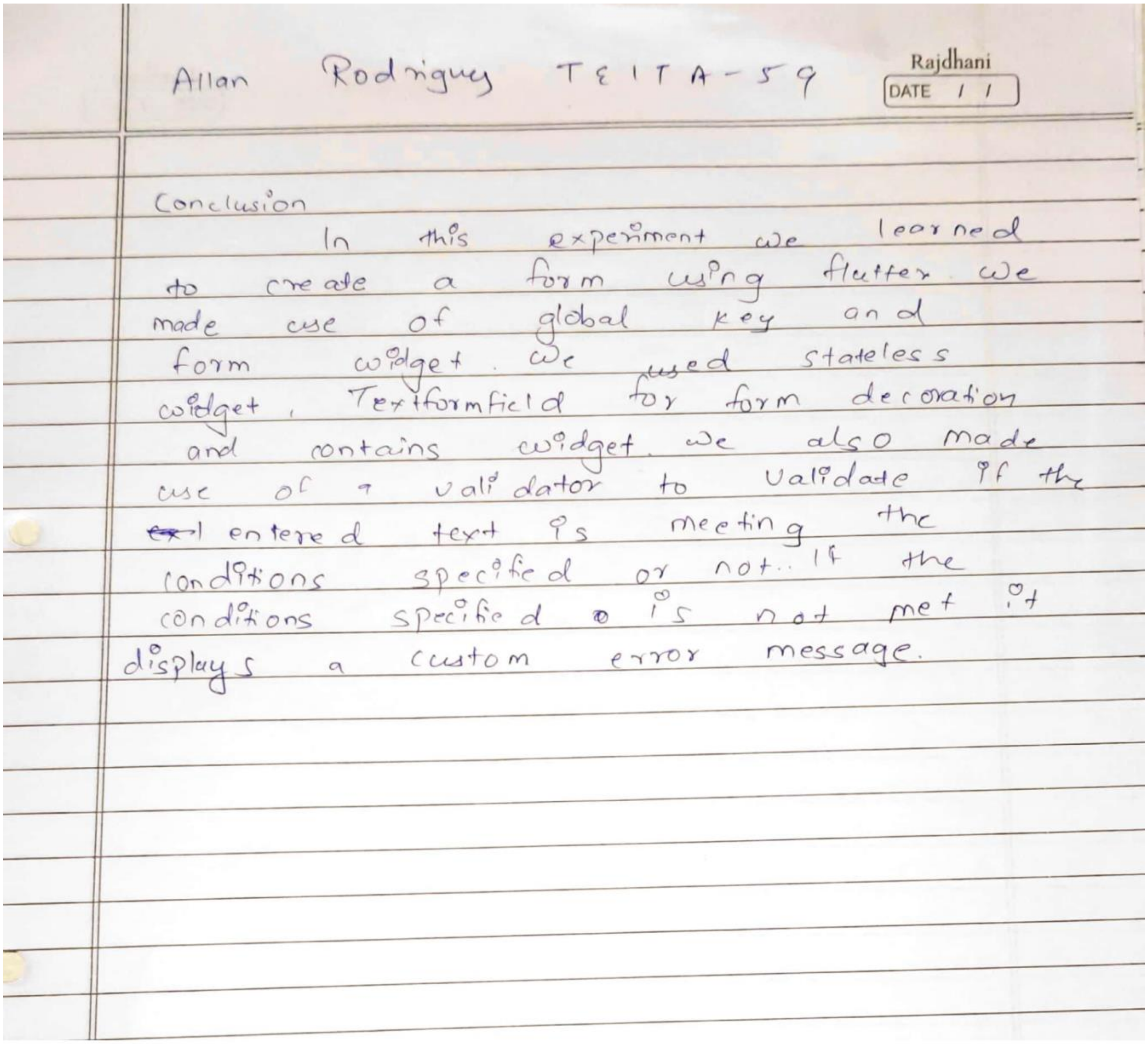
Please enter your email

Submit

Ln 79, Col 48 Spaces: 2 UTF-8 CRLF Dart Dart DevTools Flutter: 2.8.1 Pixel 2 XL API 23 (android-x86 emulator)

B. Conclusion:

1 Write what you have learnt in the experiment.



Allan Rodrigues TE IT A-59

Rajdhani
DATE / /

Conclusion

In this experiment we learned to create a form using flutter. we made use of global key and form widget. we used stateless widget, Textformfield for form decoration and contains widget. we also made use of a validator to Validate if the ~~ex~~ entered text is meeting the conditions specified or not.. If the conditions specified is not met it displays a custom error message.

C. References:

1. https://api.flutter.dev/flutter/widgets/Form-class.html
2. https://docs.flutter.dev/cookbook/forms/validation