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EXPERIMENT-2

Aim : To design Flutter UI by including common widgets.

Theory:

- Flutter is Google’s UI toolkit for crafting beautiful, natively compiled iOS and Android apps from a single code base. To build any application we start with widgets – The building block of flutter applications.
- Widgets describe what their view should look like given their current configuration and state. It includes a text widget, row widget, column widget, container widget, and many more.
- Widgets: Each element on a screen of the Flutter app is a widget. The view of the screen completely depends upon the choice and sequence of the widgets used to build the apps. And the structure of the code of an app is a tree of widgets.

Category of Widgets:

There are mainly 14 categories in which the flutter widgets are divided. They are mainly segregated on the basis of the functionality they provide in a flutter application.

1. *Accessibility*: These are the set of widgets that make a flutter app more easily accessible.
2. *Animation and Motion:* These widgets add animation to other widgets. *3.Assets, Images, and Icons*: These widgets take charge of assets such as display images and show icons.
4.Async: These provide async functionality in the flutter application.

5. *Basics:* These are the bundle of widgets that are absolutely necessary for the development of any flutter application.

6. *Cupertino*: These are the iOS designed widgets.

.7.*Input*: This set of widgets provides input functionality in a flutter application.

8.*Interaction Models:* These widgets are here to manage touch events and route users to different views in the application.

9. *Layout:* This bundle of widgets helps in placing the other widgets on the screen as needed.

10. *Material Components:* This is a set of widgets that mainly follow material design by Google.

11. *Painting and effects:* This is the set of widgets that apply visual changes to their child widgets without changing their layout or shape.

12. *Scrolling:* This provides scrollability of to a set of other widgets that are not scrollable by default.

13. *Styling:* This deals with the theme, responsiveness, and sizing of the app.

14. *Text*: This displays text

Types of Widgets:

There are broadly two types of widgets in the flutter:

1. Stateless Widget - These are immutable widgets that don't change over time.

- The UI of a stateless widget is defined based on the configuration information passed to it during its creation.
- Example: Container, Text, Icon.

2. Stateful Widget - These are mutable widgets that can change dynamically.

- Stateful widgets maintain a mutable state that might change during the widget's lifetime.
- Example: TextField, ListView, Form.

Interaction Models: These widgets are here to manage touch events and route users to different views in the application.
Layout: This bundle of widgets helps in placing the other widgets on the screen as needed.
Material Components: This is a set of widgets that mainly follow material design by Google.
Painting and effects: This is the set of widgets that apply visual changes to their child widgets without changing their layout or shape.
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Text: This displays text.

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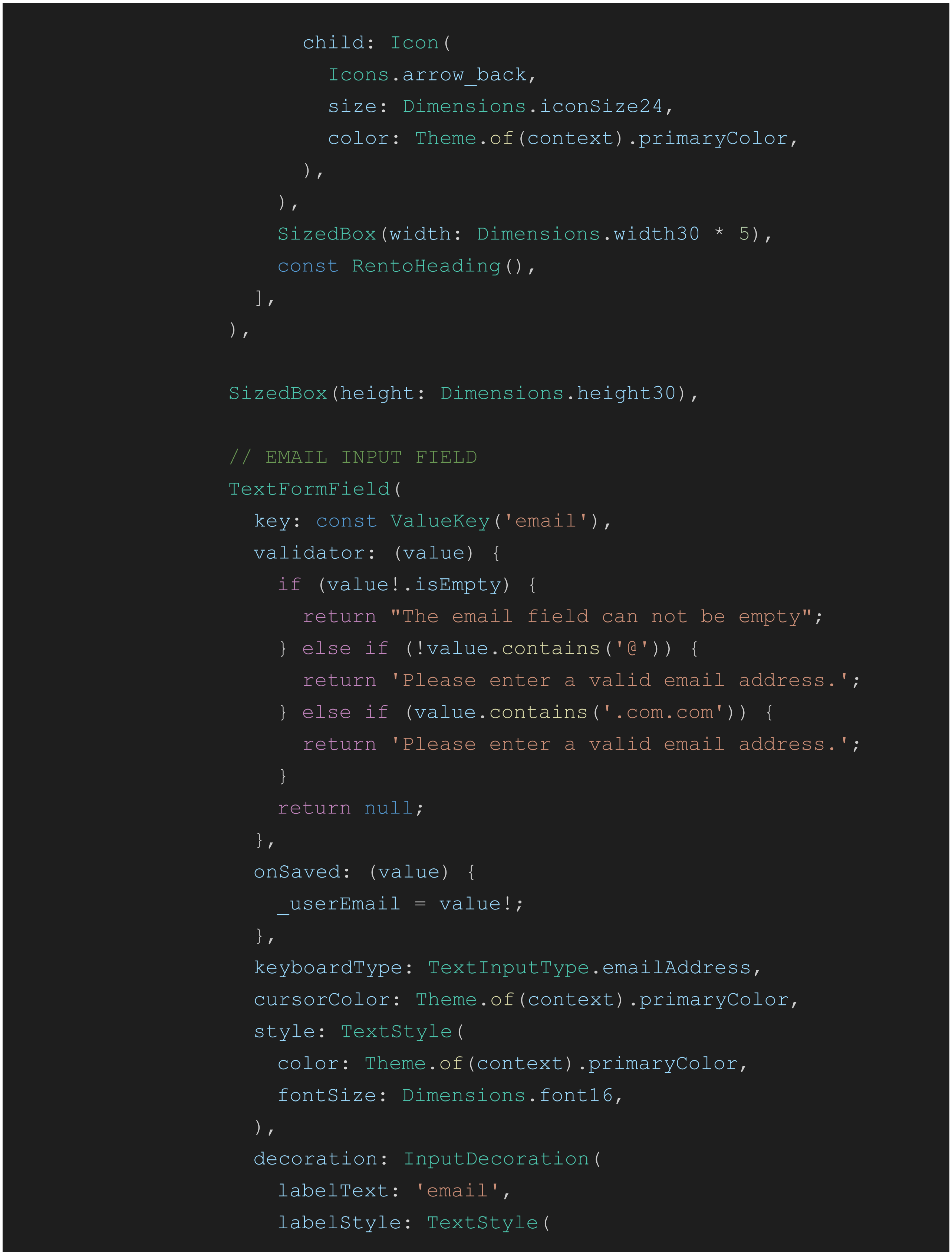
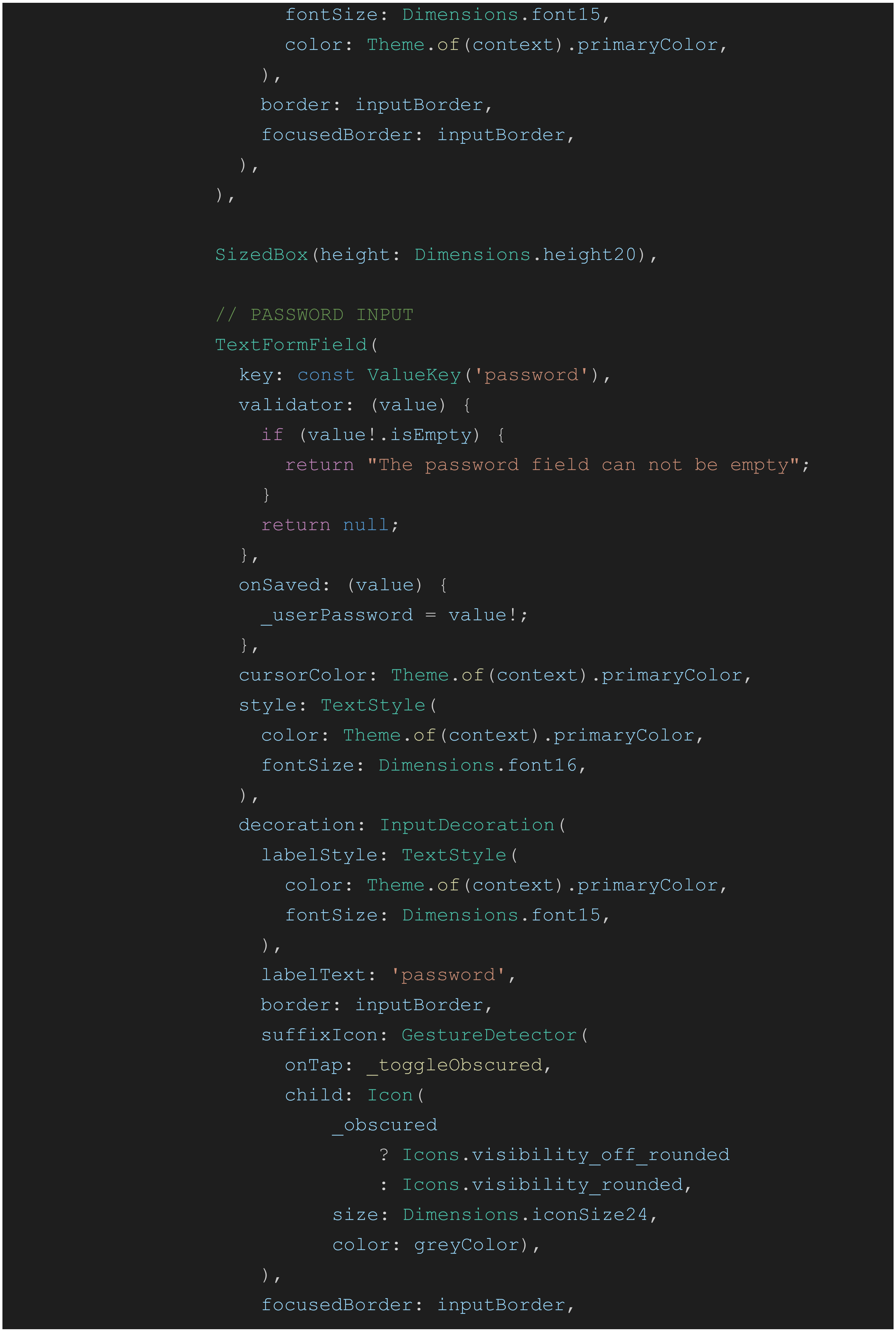
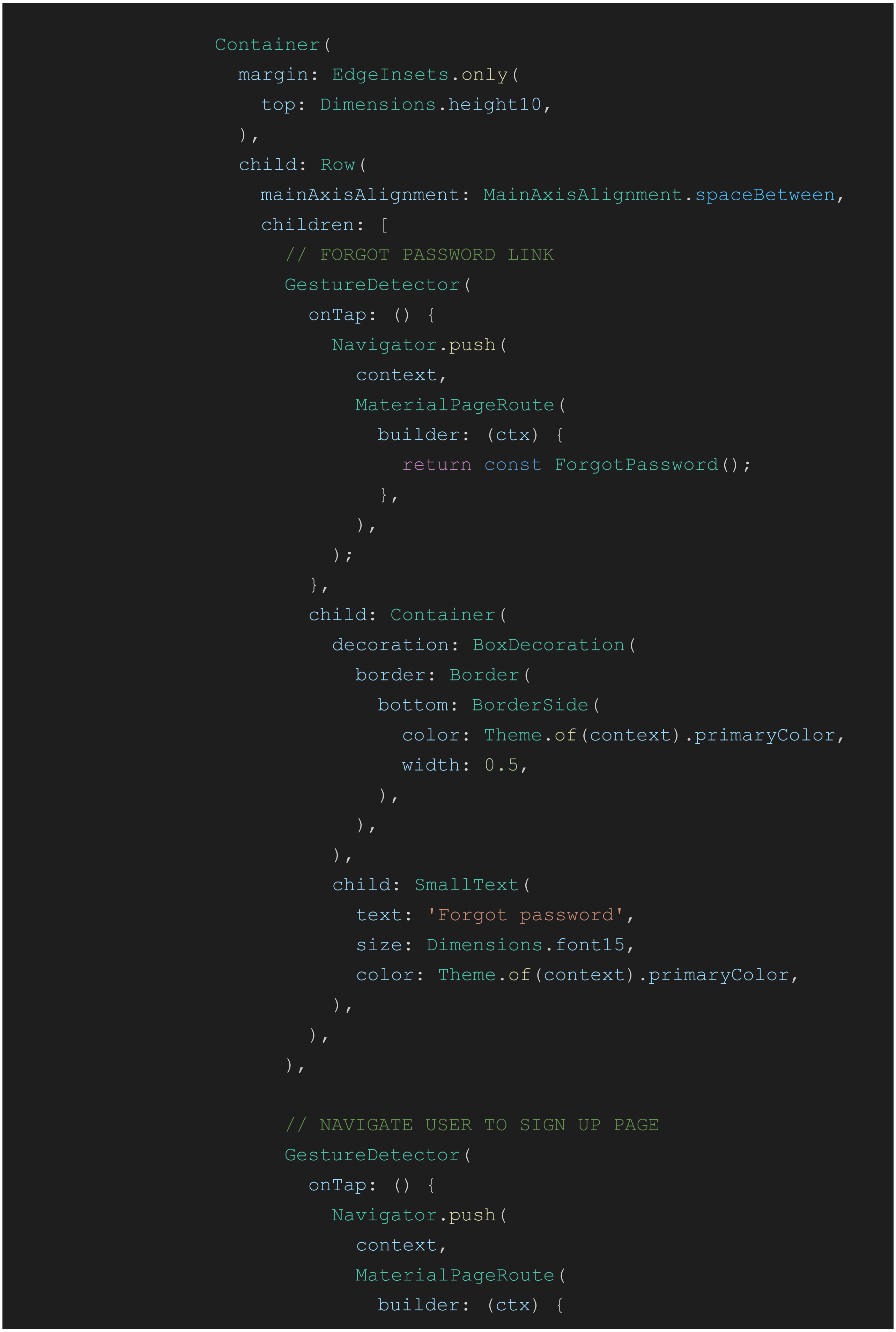
Code-



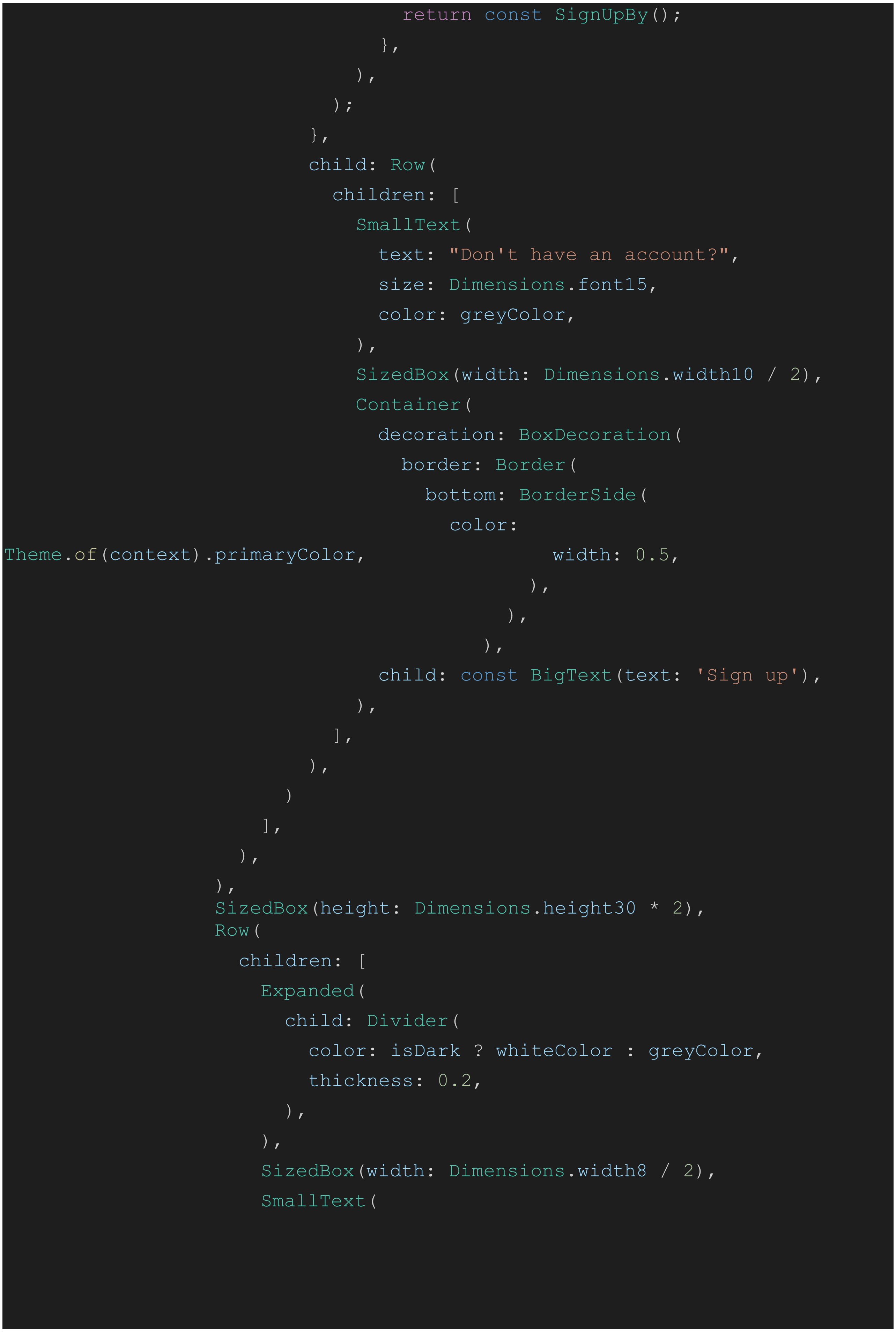
```
      child: Icon(
        Icons.arrow_back,
        size: Dimensions.iconSize24,
        color: Theme.of(context).primaryColor,
      ),
    ),
    SizedBox(width: Dimensions.width30 * 5),
    const RentoHeading(),
  ],
),

SizedBox(height: Dimensions.height30),

// EMAIL INPUT FIELD
TextFormField(
  key: const ValueKey('email'),
  validator: (value) {
    if (value!.isEmpty) {
      return "The email field can not be empty";
    } else if (!value.contains('@')) {
      return 'Please enter a valid email address.';
    } else if (value.contains('.com.com')) {
      return 'Please enter a valid email address.';
    }
    return null;
  },
  onSaved: (value) {
    _userEmail = value!;
  },
  keyboardType: TextInputType.emailAddress,
  cursorColor: Theme.of(context).primaryColor,
  style: TextStyle(
    color: Theme.of(context).primaryColor,
    fontSize: Dimensions.font16,
  ),
  decoration: InputDecoration(
    labelText: 'email',
    labelStyle: TextStyle(
```



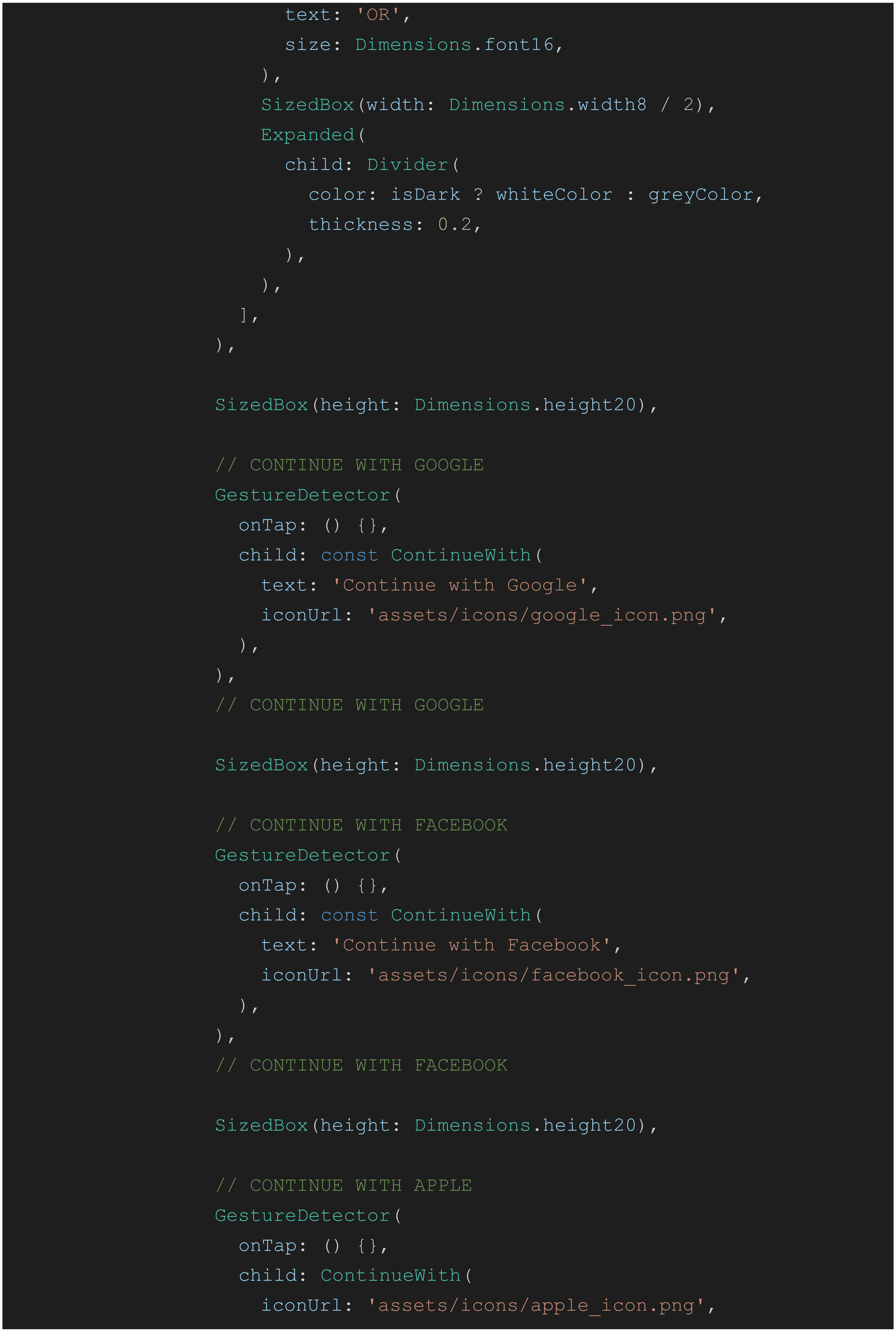
```
      fontSize: Dimensions.font15,
      color: Theme.of(context).primaryColor,
    ),
    border: inputBorder,
    focusedBorder: inputBorder,
  ),
),

SizedBox(height: Dimensions.height20),

// PASSWORD INPUT
TextFormField(
  key: const ValueKey('password'),
  validator: (value) {
    if (value!.isEmpty) {
      return "The password field can not be empty";
    }
    return null;
  },
  onSaved: (value) {
    _userPassword = value!;
  },
  cursorColor: Theme.of(context).primaryColor,
  style: TextStyle(
    color: Theme.of(context).primaryColor,
    fontSize: Dimensions.font16,
  ),
  decoration: InputDecoration(
    labelStyle: TextStyle(
      color: Theme.of(context).primaryColor,
      fontSize: Dimensions.font15,
    ),
    labelText: 'password',
    border: inputBorder,
    suffixIcon: GestureDetector(
      onTap: _toggleObscured,
      child: Icon(
          _obscured
              ? Icons.visibility_off_rounded
              : Icons.visibility_rounded,
          size: Dimensions.iconSize24,
          color: greyColor),
    ),
    focusedBorder: inputBorder,
                    ),
                    keyboardType: TextInputType.visiblePassword,
                    obscureText: _obscured,
                    focusNode: textFieldFocusNode,
                  ),

                  SizedBox(height: Dimensions.height20),

                  // LOGIN BUTTON
                  GestureDetector(
                    onTap: _trySubmit,
                    child: Container(
                      width: double.infinity,
                      alignment: Alignment.center,
                      padding:
                          EdgeInsets.symmetric(vertical:
Dimensions.height15),
                                         decoration:
                                           ShapeDecorati
                                           on( shape:
                                           RoundedRectan
                                           gleBorder(
                                             borderRadius:
                                               BorderRadius.all(
                                               Radius.circular(
                                                 Dimensions.radius20 / 2,
                              ),
                            ),
                          ),
                        color: purpleColor,
                      ),
                      child: _isLoading
                          ? SizedBox(
                              width: Dimensions.width20,
                              height: Dimensions.height20,
                              child: const CircularProgressIndicator(
                                color: whiteColor,
                                strokeWidth: 2.5,
                              ),
                            )
                          : SmallText(
                              text: "Login",
                              size: Dimensions.font15,
                              color: whiteColor,
                            ),
                    ),
),
// LOGIN BUTTON
```



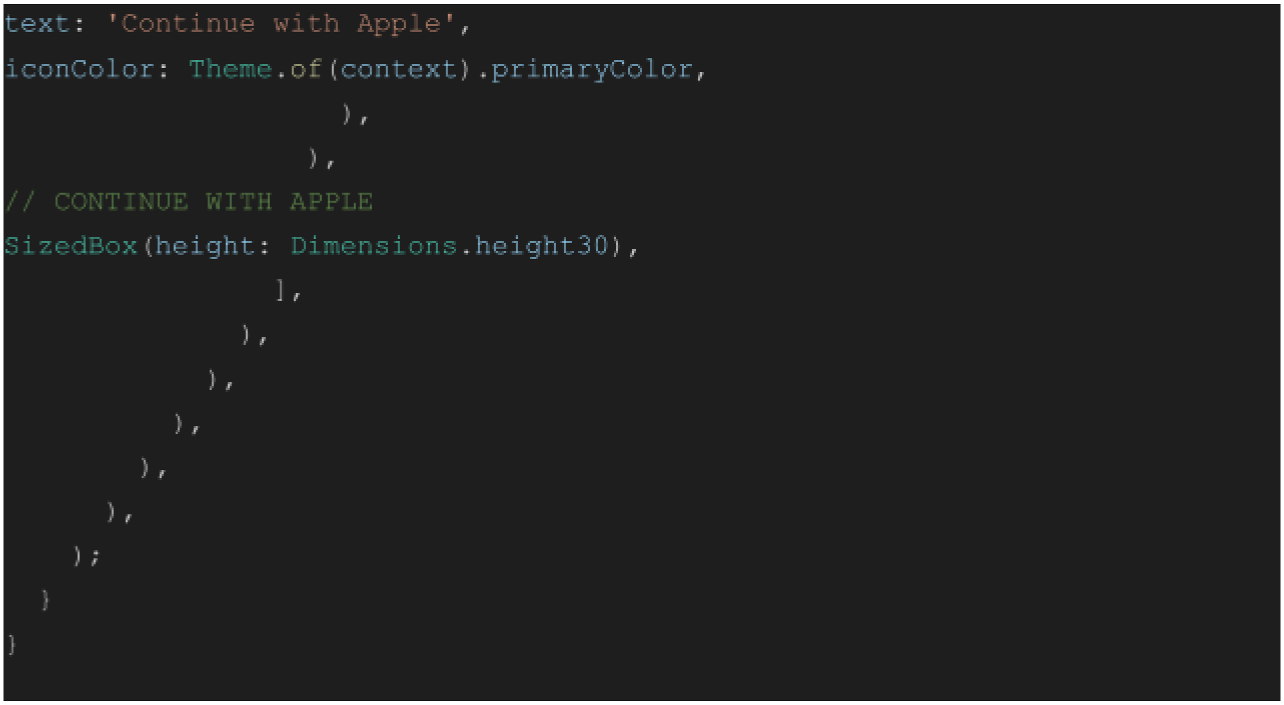
```
Container(
  margin: EdgeInsets.only(
    top: Dimensions.height10,
  ),
  child: Row(
    mainAxisAlignment: MainAxisAlignment.spaceBetween,
    children: [
      // FORGOT PASSWORD LINK
      GestureDetector(
        onTap: () {
          Navigator.push(
            context,
            MaterialPageRoute(
              builder: (ctx) {
                return const ForgotPassword();
              },
            ),
          );
        },
        child: Container(
          decoration: BoxDecoration(
            border: Border(
              bottom: BorderSide(
                color: Theme.of(context).primaryColor,
                width: 0.5,
              ),
            ),
          ),
          child: SmallText(
            text: 'Forgot password',
            size: Dimensions.font15,
            color: Theme.of(context).primaryColor,
          ),
        ),
      ),

      // NAVIGATE USER TO SIGN UP PAGE
      GestureDetector(
        onTap: () {
          Navigator.push(
            context,
            MaterialPageRoute(
              builder: (ctx) {
```



```
                                  return const SignUpBy();
                                },
                              ),
                            );
                          },
                          child: Row(
                            children: [
                              SmallText(
                                text: "Don't have an account?",
                                size: Dimensions.font15,
                                color: greyColor,
                              ),
                              SizedBox(width: Dimensions.width10 / 2),
                              Container(
                                decoration: BoxDecoration(
                                  border: Border(
                                    bottom: BorderSide(
                                      color:
Theme.of(context).primaryColor,                 width: 0.5,
                                             ),
                                           ),
                                         ),
                                child: const BigText(text: 'Sign up'),
                              ),
                            ],
                          ),
                        )
                      ],
                    ),
                  ),
                  SizedBox(height: Dimensions.height30 * 2),
                  Row(
                    children: [
                      Expanded(
                        child: Divider(
                          color: isDark ? whiteColor : greyColor,
                          thickness: 0.2,
                        ),
                      ),
                      SizedBox(width: Dimensions.width8 / 2),
                      SmallText(
```

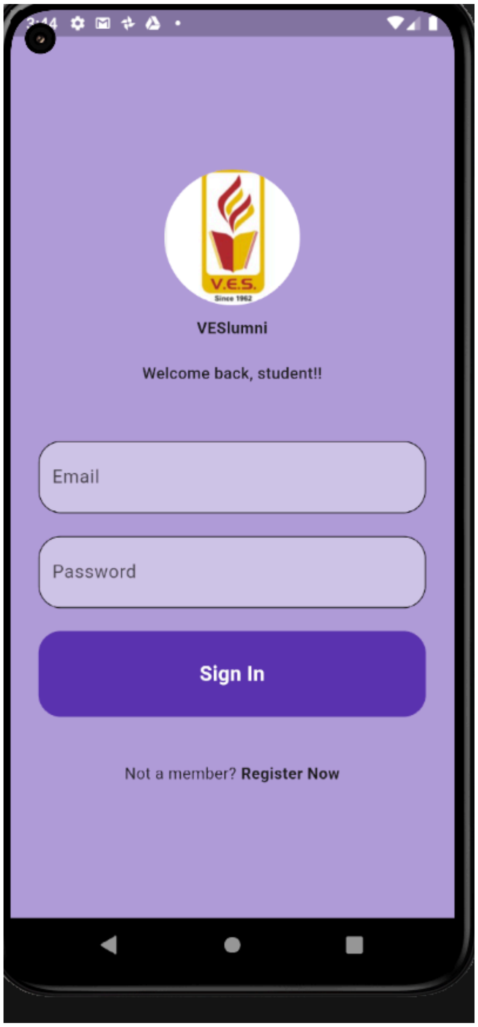


```
      text: 'OR',
      size: Dimensions.font16,
    ),
    SizedBox(width: Dimensions.width8 / 2),
    Expanded(
      child: Divider(
        color: isDark ? whiteColor : greyColor,
        thickness: 0.2,
      ),
    ),
  ],
),

SizedBox(height: Dimensions.height20),

// CONTINUE WITH GOOGLE
GestureDetector(
  onTap: () {},
  child: const ContinueWith(
    text: 'Continue with Google',
    iconUrl: 'assets/icons/google_icon.png',
  ),
),
// CONTINUE WITH GOOGLE

SizedBox(height: Dimensions.height20),

// CONTINUE WITH FACEBOOK
GestureDetector(
  onTap: () {},
  child: const ContinueWith(
    text: 'Continue with Facebook',
    iconUrl: 'assets/icons/facebook_icon.png',
  ),
),
// CONTINUE WITH FACEBOOK

SizedBox(height: Dimensions.height20),

// CONTINUE WITH APPLE
GestureDetector(
  onTap: () {},
  child: ContinueWith(
    iconUrl: 'assets/icons/apple_icon.png',
```



```
text: 'Continue with Apple',
iconColor: Theme.of(context).primaryColor,
                    ),
                  ),
// CONTINUE WITH APPLE
SizedBox(height: Dimensions.height30),
                ],
              ),
            ),
          ),
        ),
      ),
    );
  }
}
```

Output-



VESlumni

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CONCLUSION: Hence we have successfully understood the implementation of basic widgets in flutter and created a login page with it