Experiment 2

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AIM: To design Flutter UI by including common widgets.

THEORY:

Flutter Widgets: An Overview

Flutter widgets are the basic building blocks that construct the user interface of a Flutter application. They are responsible for defining the structure, appearance, and behavior of the app. Here are some fundamental widgets:

StatelessWidget and StatefulWidget:

StatelessWidget:

Represents an immutable part of the user interface.
It does not change over time and does not depend on any mutable state.

StatefulWidget:

Represents a mutable part of the user interface.
Can change over time based on user interactions or other factors.

1. Flutter Scaffold:

The Scaffold widget is the basic structure for a Flutter app, providing a layout for the visual elements.
It includes an AppBar, BottomNavigationBar, and a body for the main content.

2. Flutter Container:

The Container widget is a versatile box model that can contain other widgets.
It's used for layout, padding, margin, decoration, and constraints.

3. Flutter Row & Column:

Row and Column widgets help in arranging child widgets horizontally (Row) or vertically (Column).
Useful for creating flexible and responsive layouts.

4. Flutter Text:

The Text widget is used to display text on the screen.
It supports various styling options like font size, color, and alignment.

5. Flutter TextField:

TextField is a widget for capturing user input, such as text, numbers, or passwords.
The onChanged property is commonly used for dynamic updates based on user input.

6. Flutter Buttons:
Button widgets, such as ElevatedButton or TextButton, trigger actions when pressed.
Provide a way for users to interact with the app.

7. Flutter Forms:
The Form widget helps in managing a group of TextFormField widgets.
Facilitates the validation and submission of user input.

8. Flutter Icons:
The Icon widget displays icons from various icon libraries, such as Material Icons or custom icons.
Enhances visual elements and conveys meaning through symbols.

Key Design Principles:
Consistency: Use of common widgets fosters a consistent design language throughout the app.

Responsive Layouts: Row and Column help create responsive and flexible layouts, adapting to different screen sizes.

User Input Handling: TextField and Form widgets facilitate user input handling, ensuring data integrity and validation.

Interactive Elements: Buttons and icons contribute to the interactivity and user engagement of the app.

Visual Styling: Container and styling properties of widgets allow for visual customization and theming.

Code:
main.dart : Main entry point of our flutter app

```
import 'package:flutter/material.dart';
import 'package:tiktok_shashwat/constants.dart';
import
'package:tiktok_shashwat/views/screens/auth/login_screen.dart';

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

class MyApp extends StatelessWidget {
  const MyApp({super.key});
  // This widget is the root of your application.
  @override
  Widget build(BuildContext context) {
    return MaterialApp(
      debugShowCheckedModeBanner: false,
      // Application name
      title: 'TikTok Clone',
      theme: ThemeData.dark().copyWith(
        scaffoldBackgroundColor: backgroundColor,
      ),
      // A widget which will be started on application startup
      home: LoginScreen(),
    );
  }
}
```

constants.dart : Here the colors are defined to maintain consistency throughout the app.

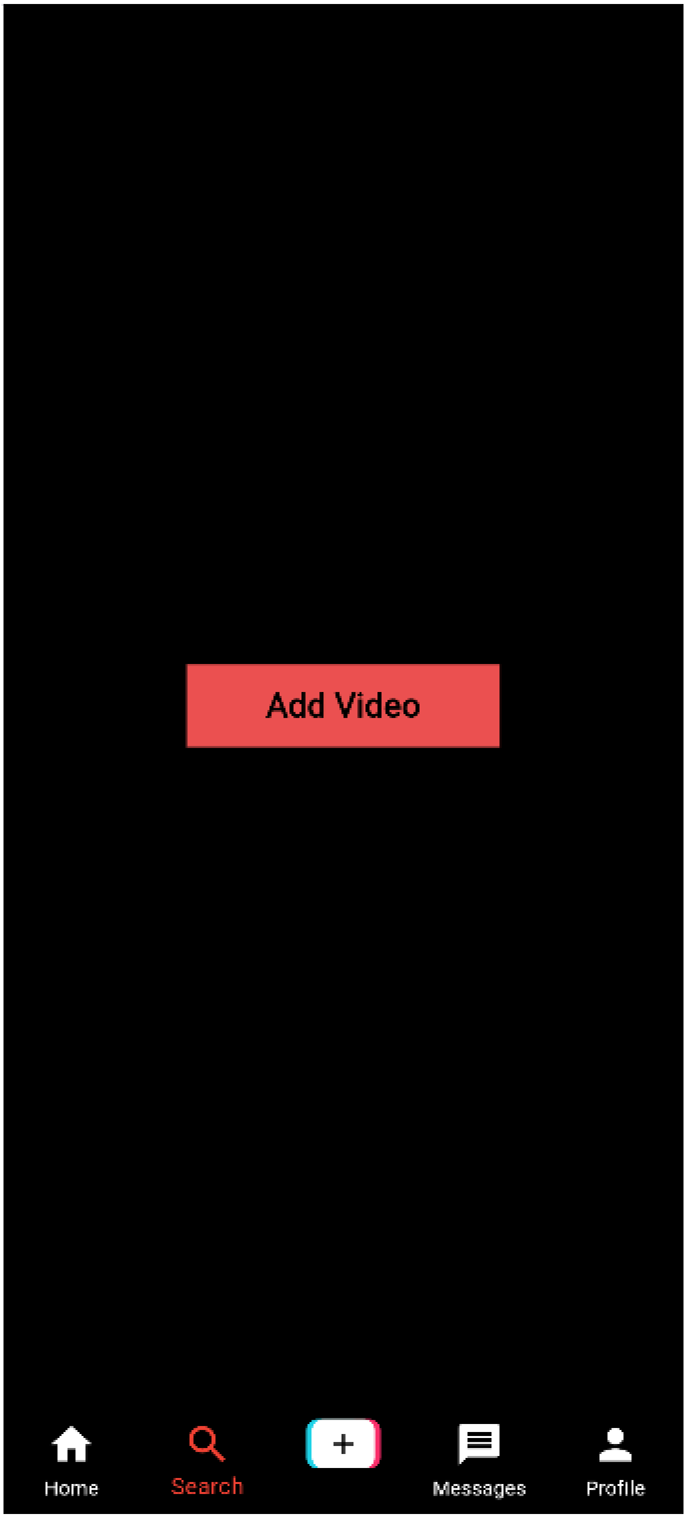
```
import 'package:flutter/material.dart';

// COLORS
const backgroundColor = Colors.black;
var buttonColor = Colors.red[400];
const borderColor = Colors.grey;
```

add_video_screen.dart :

```
import 'dart:io';

import 'package:flutter/material.dart';
import 'package:image_picker/image_picker.dart';
import 'package:tiktok_tutorial/constants.dart';
import 'package:tiktok_tutorial/views/screens/confirm_screen.dart';

class AddVideoScreen extends StatelessWidget {
  const AddVideoScreen({Key? key}) : super(key: key);

  pickVideo(ImageSource src, BuildContext context) async {
    final video = await ImagePicker().pickVideo(source: src);
    if (video != null) {
      Navigator.of(context).push(
        MaterialPageRoute(
          builder: (context) => ConfirmScreen(
            videoFile: File(video.path),
            videoPath: video.path,
          ),
        ),
      );
    }
```

```
}

showOptionsDialog(BuildContext context) {
  return showDialog(
    context: context,
    builder: (context) => SimpleDialog(
      children: [
        SimpleDialogOption(
          onPressed: () => pickVideo(ImageSource.gallery, context),
          child: Row(
            children: const [
              Icon(Icons.image),
              Padding(
                padding: EdgeInsets.all(7.0),
                child: Text(
                  'Gallery',
                  style: TextStyle(fontSize: 20),
                ),
              ),
            ],
          ),
        ),
        SimpleDialogOption(
          onPressed: () => pickVideo(ImageSource.camera, context),
          child: Row(
            children: const [
              Icon(Icons.camera_alt),
              Padding(
                padding: EdgeInsets.all(7.0),
                child: Text(
                  'Camera',
                  style: TextStyle(fontSize: 20),
                ),
              ),
            ],
          ),
        ),
        SimpleDialogOption(
          onPressed: () => Navigator.of(context).pop(),
          child: Row(
            children: const [
              Icon(Icons.cancel),
              Padding(
                padding: EdgeInsets.all(7.0),
                child: Text(
                    'Cancel',
                    style: TextStyle(fontSize: 20),
                  ),
                ),
              ],
            ),
          ),
        ],
      ),
    );
  }

  @override
  Widget build(BuildContext context) {
    return Scaffold(
      body: Center(
        child: InkWell(
          onTap: () => showOptionsDialog(context),
          child: Container(
            width: 190,
            height: 50,
            decoration: BoxDecoration(color: buttonColor),
            child: const Center(
              child: Text(
                'Add Video',
                style: TextStyle(
                  fontSize: 20,
                  color: Colors.black,
                  fontWeight: FontWeight.bold,
                ),
              ),
            ),
          ),
        ),
      ),
    );
  }
}
```

OUTPUT :



CONCLUSION: Thus, we have used some common widgets like Scaffold, Icon, Container, Button, etc. to create our login page of the application.