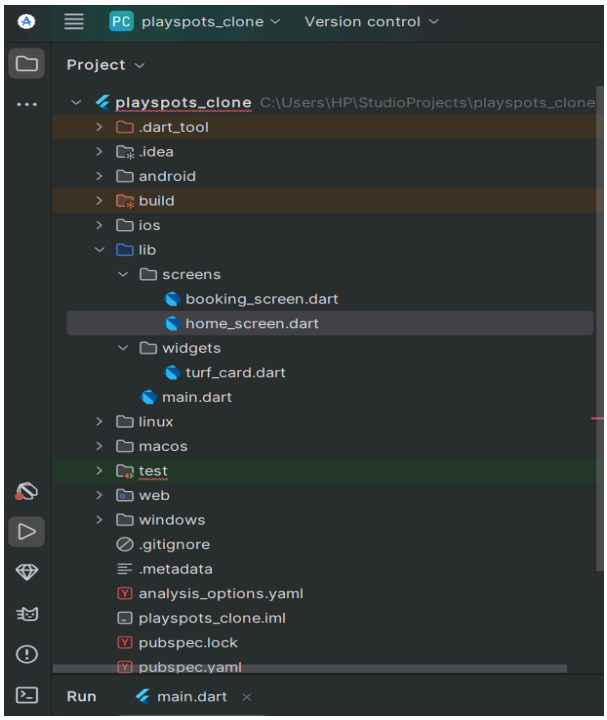
Experiment 02

Aim:-To design Flutter UI by including common widgets.

1.**Main File Structure** – Overview of the project's Flutter file structure.



README.md main.dart

```dart
// main.dart
import 'package:flutter/material.dart';
import 'screens/home_screen.dart';

void main() {
  runApp(MyApp());
}

class MyApp extends StatelessWidget {
  @override
  Widget build(BuildContext context) {
    return MaterialApp(
      debugShowCheckedModeBanner: false,
      title: 'PlaySpots',
      theme: ThemeData(
        primarySwatch: Colors.blue,
        scaffoldBackgroundColor: Colors.grey[100],
      ),  // ThemeData
      home: HomeScreen(),
    );  // MaterialApp
  }
}
```

Home Screen – Displays a list of available turfs and navigates to the booking screen

README.md home_screen.dart

```dart
import 'package:flutter/material.dart';
import '../widgets/turf_card.dart';
import 'booking_screen.dart';

class HomeScreen extends StatelessWidget {
  final List<Map<String, String>> turfs = [
    {
      'name': 'Green Field Arena',
      'location': 'Dadar West',
      'price': '1200',
    },
    {
      'name': 'Sports Paradise',
      'location': 'Thane West',
      'price': '800',
    },
    {
      'name': 'Football Ground',
      'location': 'Andheri',
      'price': '1000',
    },
  ];

  @override
  Widget build(BuildContext context) {
    return Scaffold(
```

README.md home_screen.dart

```dart
Widget build(BuildContext context) {
  return Scaffold(
    appBar: AppBar(
      title: Text('PlaySpots'),
      actions: [
        IconButton(
          icon: Icon(Icons.search),
          onPressed: () {},
        ),  // IconButton
      ],
    ),  // AppBar
    body: ListView.builder(
      itemCount: turfs.length,
      itemBuilder: (context, index) {
        final turf = turfs[index];
        return TurfCard(
          name: turf['name']!,
          location: turf['location']!,
          price: turf['price']!,
          onBook: () {
            Navigator.push(
              context,
              MaterialPageRoute(
                builder: (context) => BookingScreen(turfDetails: turf),
              ),  // MaterialPageRoute
            );
```

BookingScreen Class – Implements a UI screen for booking a turf with date, time, and duration selection.

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

class BookingScreen extends StatefulWidget {
 final Map<String, String> turfDetails;

 const BookingScreen({required this.turfDetails});

 @override
 _BookingScreenState createState() => _BookingScreenState();
}

class _BookingScreenState extends State<BookingScreen> {
 DateTime selectedDate = DateTime.now();
 String selectedTime = '7:00 AM';
 int duration = 1;

 final List<String> timeSlots = [
   '7:00 AM', '8:00 AM', '9:00 AM', '10:00 AM', '4:00 PM',
   '5:00 PM', '6:00 PM', '7:00 PM', '8:00 PM',
 ];

 @override
 Widget build(BuildContext context) {
   return Scaffold(
     appBar: AppBar(
       title: Text('Book ${widget.turfDetails['name']}'),
     ),
     body: SingleChildScrollView(
       padding: EdgeInsets.all(16),
       child: Column(
```

```
        crossAxisAlignment: CrossAxisAlignment.start,
        children: [
          // Date Selection
          Text(
            'Select Date',
            style: TextStyle(fontSize: 18, fontWeight: FontWeight.bold),
          ),
          SizedBox(height: 8),
          OutlinedButton(
            onPressed: () async {
              final DateTime? picked = await showDatePicker(
                context: context,
                initialDate: selectedDate,
                firstDate: DateTime.now(),
                lastDate: DateTime.now().add(Duration(days: 30)),
              );
              if (picked != null) {
                setState(() {
                  selectedDate = picked;
                });
              }
            },
            child: Text(
              '${selectedDate.day}/${selectedDate.month}/${selectedDate.year}',
            ),
          ),
SizedBox(height: 24),

          // Time Selection
          Text(
            'Select Time',
            style: TextStyle(fontSize: 18, fontWeight: FontWeight.bold),
          ),
          SizedBox(height: 8),
          Wrap(
            spacing: 8,
            runSpacing: 8,
            children: timeSlots.map((time) {
              return ChoiceChip(
                label: Text(time),
                selected: selectedTime == time,
                onSelected: (selected) {
                  setState(() {
                    selectedTime = time;
                  });
                },
              );
            }).toList(),
          ),

          SizedBox(height: 24),

          // Duration
          Text(
            'Duration',
            style: TextStyle(fontSize: 18, fontWeight: FontWeight.bold),
          ),
          SizedBox(height: 8),
          Row(
            children: [
              IconButton(
                onPressed: () {
                  if (duration > 1) {
                    setState(() {
                      duration--;
                    });
                  }
                },
                icon: Icon(Icons.remove),
              ),
              Text(
```

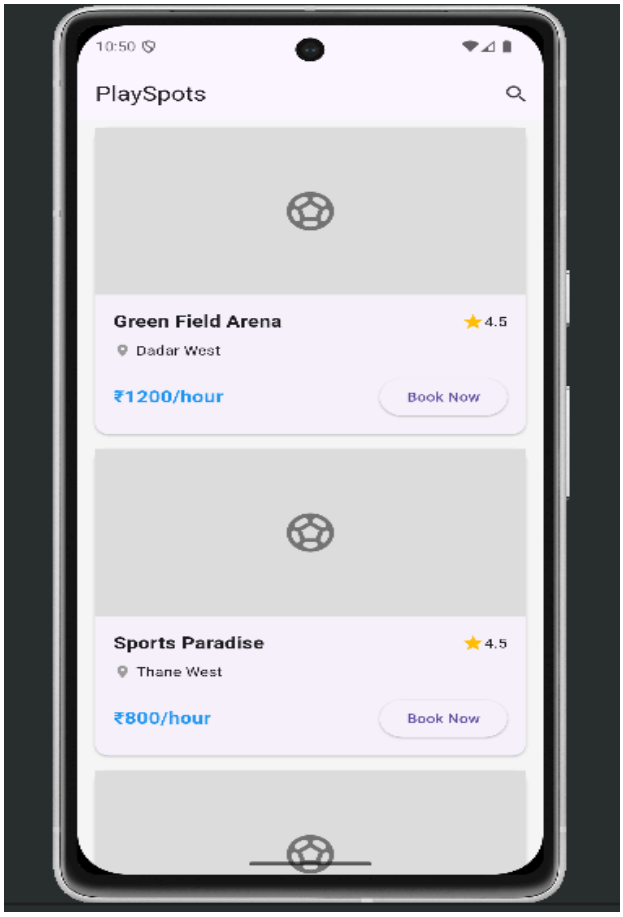
```
              '$duration hour${duration > 1 ? 's' : ''}',
              style: TextStyle(fontSize: 16),
            ),
            IconButton(
              onPressed: () {
                setState(() {
                  duration++;
                });
              },
              icon: Icon(Icons.add),
            ),
          ],
        ),

        SizedBox(height: 32),

        // Total Price
        Container(
          padding: EdgeInsets.all(16),
          decoration: BoxDecoration(
            color: Colors.blue[50],
            borderRadius: BorderRadius.circular(8),
          ),
          child: Row(
            mainAxisAlignment: MainAxisAlignment.spaceBetween,
            children: [
              Text(
                'Total Price:',
                style: TextStyle(fontSize: 18, fontWeight: FontWeight.bold),
              ),
              Text(
                '₹${int.parse(widget.turfDetails['price']!) * duration}',
                style: TextStyle(
                  fontSize: 18,
                  fontWeight: FontWeight.bold,
                  color: Colors.blue,
                ),
              ),
            ],
          ),
        ),

        SizedBox(height: 24),

        // Book Button
        SizedBox(
          width: double.infinity,
          child: ElevatedButton(
            onPressed: () {
              // Show booking confirmation
              ScaffoldMessenger.of(context).showSnackBar(
                SnackBar(
                  content: Text('Booking confirmed!'),
                  backgroundColor: Colors.green,
                ),
              );
              Navigator.pop(context);
            },
            child: Padding(
              padding: EdgeInsets.all(16),
              child: Text(
                'Confirm Booking',
                style: TextStyle(fontSize: 16),
              ),
            ),
          ),
        ),
      ],
    ),
  ),
```

TurfCard Widget – Displays a card UI for each turf, including details like name, location, and price.

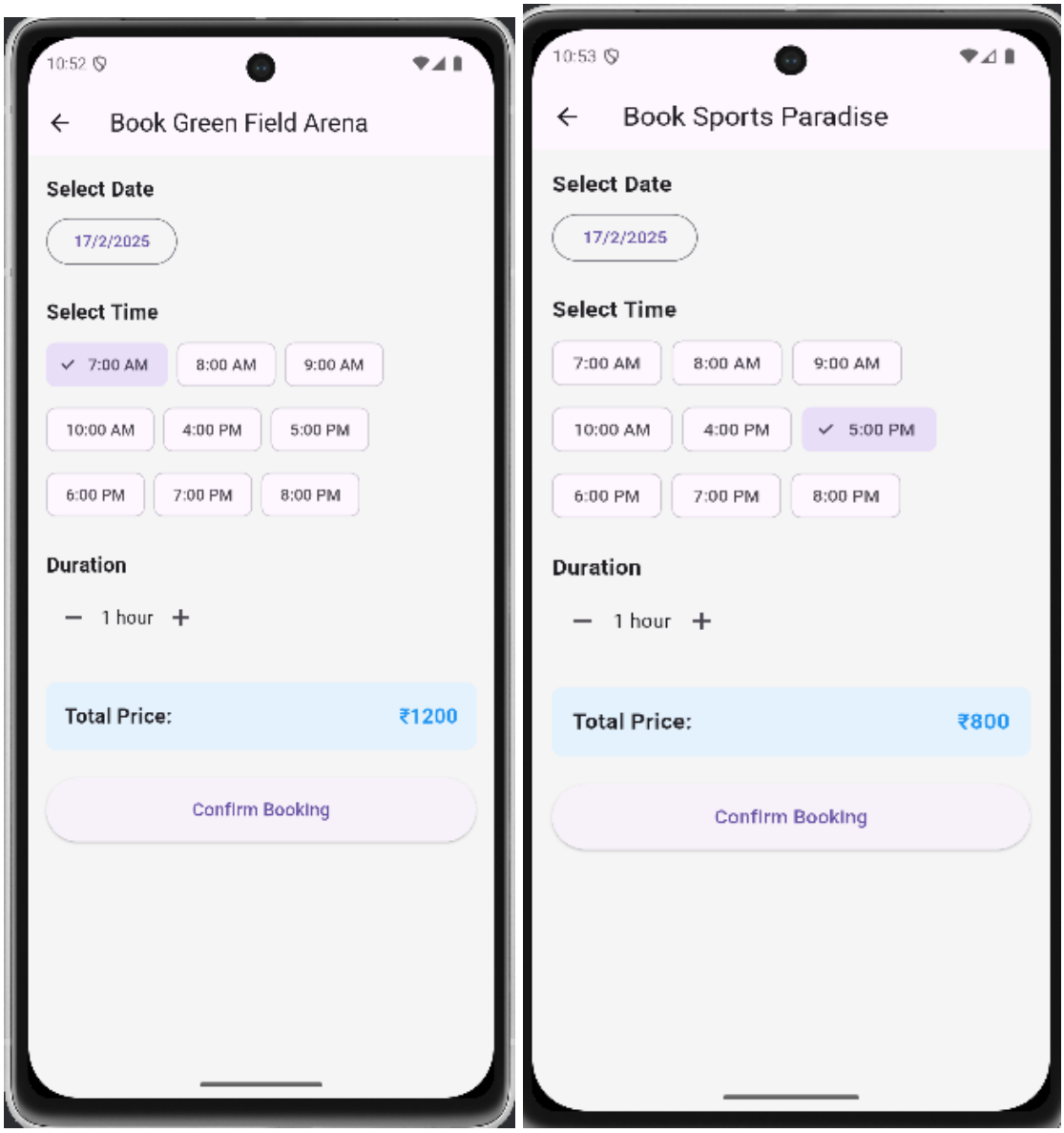
```dart
import 'package:flutter/material.dart';

class TurfCard extends StatelessWidget {
 final String name;
 final String location;
 final String price;
 final VoidCallback onBook;

 const TurfCard({
   required this.name,
   required this.location,
   required this.price,
   required this.onBook,
 });

 @override
 Widget build(BuildContext context) {
   return Card(
     margin: EdgeInsets.symmetric(horizontal: 16, vertical: 8),
     child: Column(
       crossAxisAlignment: CrossAxisAlignment.start,
       children: [
         // Turf Image
         Container(
           height: 180,
           width: double.infinity,
           color: Colors.grey[300],
           child: Center(
             child: Icon(Icons.sports_soccer, size: 50, color: Colors.grey[600]),
           ),
         ),

         Padding(
           padding: EdgeInsets.all(16),
           child: Column(
             crossAxisAlignment: CrossAxisAlignment.start,
             children: [
               // Name and Rating
               Row(
                 mainAxisAlignment: MainAxisAlignment.spaceBetween,
                 children: [
                   Text(
                     name,
                     style: TextStyle(
                       fontSize: 18,
                       fontWeight: FontWeight.bold,
                     ),
                   ),
                   Row(
                     children: [
                       Icon(Icons.star, color: Colors.amber, size: 20),
                       Text('4.5'),
                     ],
                   ),
                 ],
               ),
               SizedBox(height: 8),

               // Location
               Row(
                 children: [
                   Icon(Icons.location_on, size: 16, color: Colors.grey),
```

```
                SizedBox(width: 4),
                Text(location),
              ],
            ),
            SizedBox(height: 16),

            // Price and Book Button
            Row(
              mainAxisAlignment: MainAxisAlignment.spaceBetween,
              children: [
                Text(
                  '₹$price/hour',
                  style: TextStyle(
                    fontSize: 18,
                    fontWeight: FontWeight.bold,
                    color: Colors.blue,
                  ),
                ),
                ElevatedButton(
                  onPressed: onBook,
                  child: Text('Book Now'),
                ),
              ],
            ),
          ],
        ),
      ),
    ],
  ),
 );
 }
}
```

TurfCard Layout – UI structure including an image, name, rating, and location of the turf.



Duration Selection – UI components to adjust the booking duration.
Total Price Calculation – Computes and displays the total booking price dynamically.
Confirmation Button – Implements a button to confirm the booking with a success message.



Conclusion:-

In this experiment we successfully developed a structured and interactive turf booking application by utilizing Flutter's core widgets. The Main File Structure provides the foundation for the app, while the Home Screen lists available turfs, allowing users to navigate to the Booking Screen. Within the Booking Screen, users can choose a date and time slot, set the duration, and view the total price before confirming their booking. The TurfCard Widget ensures a visually appealing representation of turfs, including details such as name, location, rating, and price. Finally, the Booking Button facilitates a seamless transition from browsing to booking. This experiment effectively demonstrates the integration of multiple Flutter widgets to create a user-friendly and functional mobile application.