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Lab-10
Smart Device Programming

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Git Repo: https://github.com/vasu-1/SDP_Labs/tree/main/lab10

Widget life cycle and PACKAGES WITH API Calling basic

Stateless widget Stateful widget

- State doesn't change over time - State can change over time
- Build function only runs once. - setState() trigger the build function

LIFE CYCLE OF STATEFUL WIDGET

➤ initState()

Called only once when the widget is created.

Subscribe to streams or any object that could change our widget data.

➤ Build()

Builds the widget tree.

A build is triggered every time we use setState().

➤ Dispose()

When the widget/state object is removed.

Now we will use fake api for json. Below is the code for that. In code, we have defined one method using async await in order to get synchronized output. The final output would be shown in the console. First print statement will print the whole response fetched by api. Then the second statement will print the data part. In the third statement we are printing only titles from all the data. Add this code into pubspec.yaml in order to include the http package.

World_time.dart

```
import 'package:http/http.dart';  
import 'dart:convert';
```

```

class WorldTime {

  String? location;
  String? time;
  String? flag;
  String? url;

  WorldTime({ this.location, this.flag, this.url });

  Future<void> getTime() async {
    Response response = await
get(Uri.parse('http://worldtimeapi.org/api/timezone/$url'));
    Map timeData = jsonDecode(response.body);
    String dateTime = timeData['datetime'];
    String offset = timeData['utc_offset'];
    String offsetHours = offset.substring(1,3);
    String offsetMinutes = offset.substring(4,6);
    DateTime currenttime = DateTime.parse(dateTime);
    currenttime = currenttime.add(
      Duration(minutes:
        int.parse(offsetMinutes), hours: int.parse(offsetHours)));
    time = currenttime.toString();
  }
}

```

We can set any region. First we have retrieved the time of kolkata, Then Salata. Now we will print this time on our device screen. For that create two files and add below code into it

home.dart

```

import 'package:flutter/material.dart';

class Home extends StatefulWidget {
  const Home({Key? key}) : super(key: key);

  @override
  State<Home> createState() => _HomeState();
}

class _HomeState extends State<Home> {
  @override
  Widget build(BuildContext context) {
    return Scaffold(
      body: SafeArea(
        child: Container(
          padding: EdgeInsets.all(8.0),
          child: TextButton.icon(
            onPressed: () {
              Navigator.pushNamed(context, "/location");
            },
            icon: Icon(Icons.edit_location,
              color: Colors.redAccent,
            ),
            label: Text("Edit Location",
              style: TextStyle(
                fontSize: 18.0,
                color: Colors.redAccent,

```

```

    ),
    ),
    ),
    ),
    ),
    );
}
}

```

- We have set a counter such that each time we will press button it will increment the number of subjects and print line in console. Using async await output would be as below:

loading.dart

```

import "package:flutter/material.dart";
import 'dart:convert';
import 'package:http/http.dart';
import 'package:lab10/world_time.dart';

class Loading extends StatefulWidget {
  const Loading({Key? key}) : super(key: key);

  @override
  State<Loading> createState() => _LoadingState();
}

class _LoadingState extends State<Loading> {
  String? time = 'LOADING.....';

  void setWorldTime() async {
    WorldTime timeinstance = WorldTime(location: 'kolkata', flag:
'india.png', url: 'Asia/Kolkata');
    await timeinstance.getTime();
    setState(() {
      time = timeinstance.time;
    });
  }

  void initState() {
    super.initState();
    // getData();
    setWorldTime();
  }

  @override
  Widget build(BuildContext context) {
    return Scaffold(
      appBar: AppBar(
        title: Text("Loading Screen"),
        centerTitle: true,
        backgroundColor: Colors.blue,
      ),
      body: Container(
        padding: EdgeInsets.all(17.0),
        child: Text(time.toString()),
      ),
    );
  }
}

```

choose_location.dart

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

class ChooseLocation extends StatefulWidget {
  const ChooseLocation({Key? key}) : super(key: key);

  @override
  State<ChooseLocation> createState() => _ChooseLocationState();
}

class _ChooseLocationState extends State<ChooseLocation> {
  int counter = 0;

  void initState() {
    super.initState();
    print("INIT STATE FUNCTION RAN IN CHOOSE LOCATION ... ");
  }

  @override
  Widget build(BuildContext context) {
    print("BUILD FUNCTION OF CHOOSE LOCATION");
    return Scaffold(
      appBar: AppBar(
        title: Text("CHOOSE LOCATION"),
        centerTitle: true,
        backgroundColor: Colors.red,
      ),
      body: ElevatedButton(
        onPressed: () {
          setState(() {
            counter ++;
          });
        },
        child: Text("Counter = $counter"),
        style: ElevatedButton.styleFrom(
          primary: Colors.red,
        ),
      ),
    );
  }
}
```

main.dart

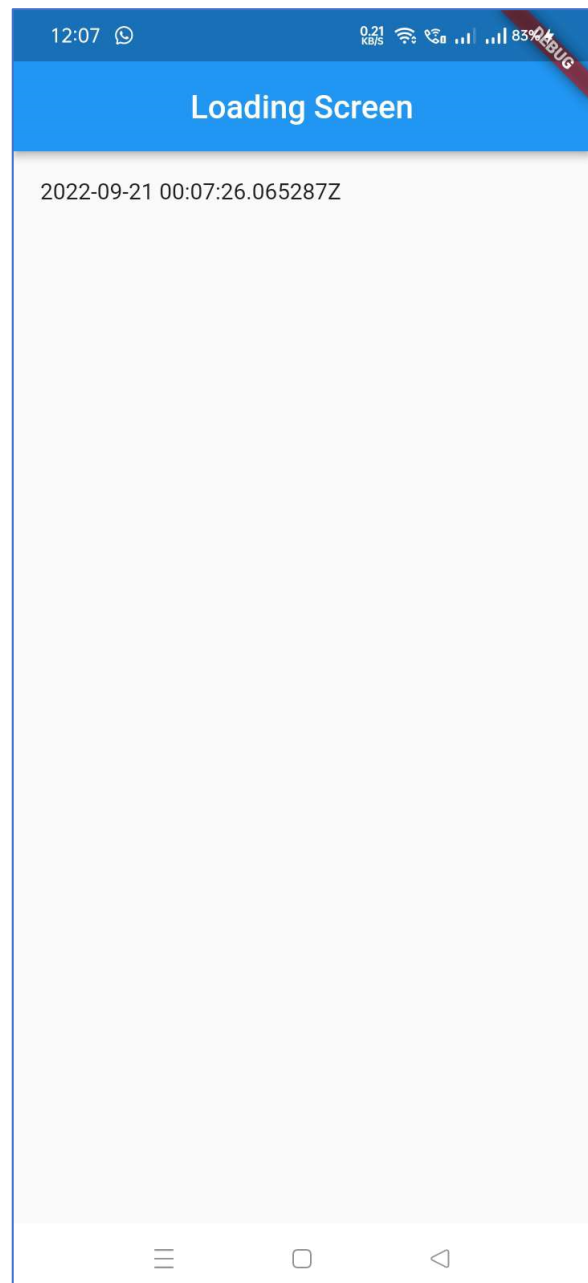
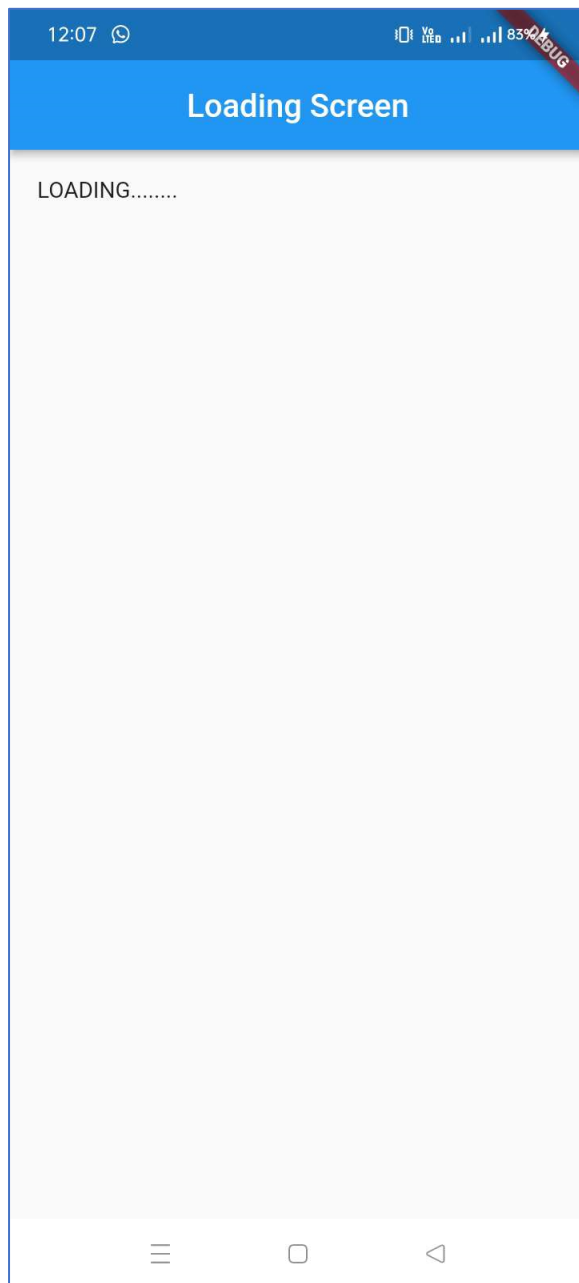
```
import "package:flutter/material.dart";
import 'package:lab10/loading.dart';
import 'package:lab10/choose_location.dart';
import 'package:lab10/home.dart';

void main() {
```

```

runApp(MaterialApp(
  initialRoute: "/",
  routes: {
    "/": (context) => Loading(),
    "/home": (context) => Home(),
    "/location": (context) => ChooseLocation(),
  },
)); /**/
}

```



THANK YOU