Academic Year

(2023-2024)

Birla Vishvakarma Mahavidyalaya

A report of summer internship-1 (ITIS1) submitted in partial

fulfilment of the requirements for the Award of

Degree of

BACHELOR OF TECHNOLOGY

in

INFORMATION TECHNOLOGY

by

Dhyey Bhanderi

ID No : 22IT458

Under the supervision of Mr. Maulik Shah

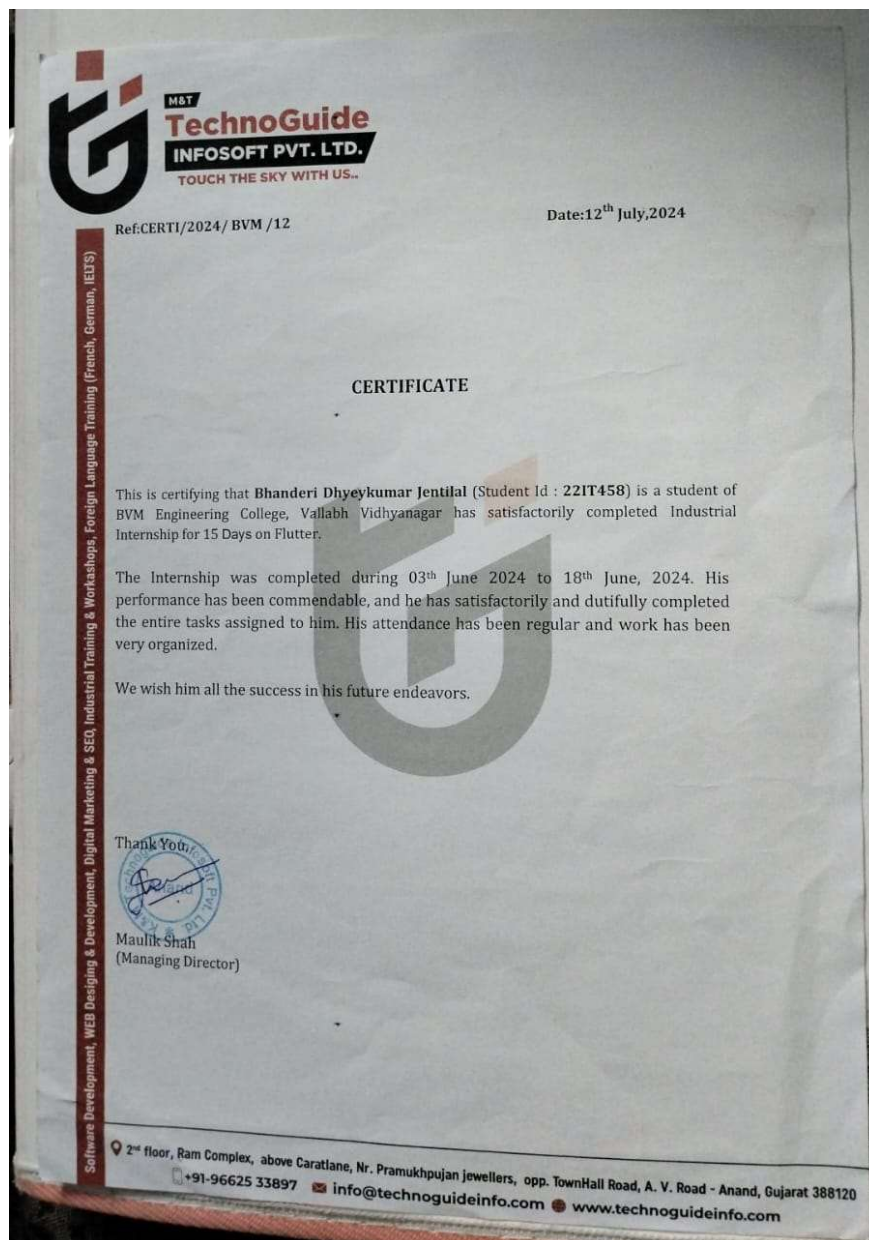TechnoGuide Infosoft Pvt. Ltd.

Anand, India

Duration : 3th June, 2024 to 18 th June, 2024

Internship Subject : Flutter Development

Position : Flutter Development Intern

Faculty Counsellor : Prof. Priyank N. Bhojak
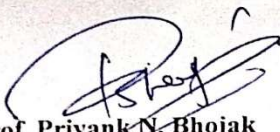
Certificate of completion

Birla Vishvakarma Mahavidyalaya Engineering College

(An Autonomous Institution)

Information Technology Department

AY: 2023-24, Semester II

CERTIFICATE

This is to certify that **Bhanderi Dhyey Jentibhai** with ID **22IT458** has been successfully completed summer Internship -1 (ITIS1) under my guidance during the academic year 2023-24, Semester II.

Date: 08/02/24

Prof. Priyank N. Bhojak
Faculty Counselor,
IT Department
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Acknowledgement

- I take this opportunity with all gratitude and appreciation from TechnoGuide Infosoft Pvt. Ltd. to complete the internship for 15 days in the area of Bootstrap and Flutter. This has, in a major way, developed my technical expertise and helped to polish my skills in web as well as mobile application development.

- I extend my heartfelt gratitude to the management for placing their trust and support behind my endeavor to work on real-world projects and get practical exposure. Special mention goes to my mentor for continuous guidance, valuable insights, and motivation that massively contributed to learning.

- I am also very grateful to all the team members of TechnoGuide Infosoft Pvt. Ltd. for cooperating, supporting me, and offering knowledge.

- Moreover, I give thanks to the other interns along with me on this internship whose collaboration and the learning experience along with me enriched my knowledge.

- This experience proved to be immensely valuable, filling me with enough technical proficiency along with confidence while facing future challenges. Thanks, TechnoGuide Infosoft Pvt. Ltd. for this wonderful experience of learning

-Dhyey Bhanderi

Abstract

This report summarizes my 15-day internship experience at TechnoGuide Infosoft Pvt. Ltd., where I worked extensively with Bootstrap for web development and Flutter for mobile application development. This internship aimed at getting hands-on experience and understanding modern development frameworks in-depth.

This was the time I was given to work on the Bootstrap fundamentals, such as progress bars, dark mode, grid layouts, pagination, spinners, navigation bars, and form validation. For Flutter, I focused on setting up projects, implementing tasks, and creating applications such as a TO-DO app and a news application that integrated APIs.

This internship has helped me develop a strong foundation in creating responsive web designs and cross-platform mobile applications. Additionally, it has enhanced my problem-solving skills and provided valuable insights into best practices in development.

The experience gained through this program has been extremely beneficial, preparing me for future endeavours in web and mobile app development.

22IT458

About the Firm

TechnoGuide Infosoft Pvt. Ltd., established in 2012 in Anand, Gujarat, India, is a leading software development company specializing in high-quality website design and development services tailored to meet the needs of businesses and individuals.

1. **Services:** TechnoGuide Infosoft Pvt. Ltd. Offers a diverse range of services, including web development, eCommerce solutions, search engine optimization (SEO), email marketing, and graphic design. Additionally, the company provides foreign language training in French, German, and Spanish.
2. **Technical Expertise:** The company's development team is highly skilled in modern web technologies, creating dynamic and responsive websites using advanced tools and frameworks. Their expertise extends to CMS-based web solutions, allowing clients to manage their content efficiently.
3. **Customer-Focused Approach:** TechnoGuide Infosoft emphasizes customer satisfaction by delivering cost-effective, scalable, and easy-to-maintain web solutions. Their commitment to professional design and seamless functionality ensures businesses of all sizes establish a strong online presence.
4. **Innovation & Adaptability:** Keeping up with evolving digital trends, TechnoGuide Infosoft delivers modern, visually appealing, and user-friendly web solutions. Their focus on both aesthetics and usability ensures clients receive a well-rounded digital experience.

TechnoGuide Infosoft Pvt. Ltd. Is a reliable choice for businesses seeking innovative, affordable, and user-centric website solutions that drive long-term digital success.

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Task 1: Bootstrap Basic(04/06/24)

Bootstrap is a popular open-source front-end framework used to create responsive and mobile-first web pages quickly. It provides pre-designed CSS styles, JavaScript components, and a grid system to make web development faster and more efficient.

Uses of Bootstrap:

- Responsive Design – Ensures web pages adjust smoothly on different screen sizes.
- Predefined Components – Provides ready-to-use elements like buttons, forms, cards, modals, and more.
- Grid System – Allows easy layout design using rows and columns.
- Customization – Can be modified with CSS or SCSS to fit specific design needs.
- Cross-Browser Compatibility – Works on all modern browsers without major issues.
- Faster Development – Reduces development time by offering reusable components.

Main Components in Bootstrap

- Grid System – Used to create flexible layouts using rows and columns.
- Typography – Styled headings, paragraphs, and text utilities.
- Buttons – Predefined button styles (btn-primary, btn-success, btn-danger, etc.).
- Forms – Styled input fields, checkboxes, radio buttons, and validation.
- Navbars – Responsive navigation bars.
- Cards – Containers for displaying content with images and text.
- Alerts – Used to show messages (success, warning, error).
- Modals – Pop-up dialogs for alerts or additional content.
- Carousel – Image sliders for displaying multiple items.

Bootstrap Versions

This tutorial follows Bootstrap 3, which was released in 2013. However, we also cover newer versions; Bootstrap 4 (released 2018) and Bootstrap 5 (released 2021).

Bootstrap 5 is the newest version of Bootstrap; with new components, faster stylesheets, more responsiveness etc. It supports the latest, stable releases of all major browsers and platforms. However, Internet Explorer 11 and down is not supported.

The main differences between Bootstrap 5 and Bootstrap 3 & 4, is that Bootstrap 5 has switched to JavaScript instead of jQuery.

Languages Used in Bootstrap

Bootstrap primarily uses:

- HTML – For structuring the webpage.
- CSS (SCSS) – For styling and responsive design.
- JavaScript (JS) – For interactivity and dynamic components (like modals and tooltips).

Creating Your First Web Page with Bootstrap

Building a web page with Bootstrap is simple and efficient. Bootstrap ensures that your website is responsive, meaning it will adjust beautifully on mobile, tablet, and desktop screens. Let's go step by step.

1. Setting Up the HTML Structure

A Bootstrap-based webpage starts with HTML5 doctype to ensure compatibility with modern browsers. It also includes the lang attribute for accessibility and the meta charset for correct text encoding.

2. Ensuring Mobile Responsiveness

Bootstrap is designed with mobile-first principles, meaning it prioritizes smaller screens. To ensure proper scaling on different devices, add the following meta tag in the <head> section:

This ensures:

- The page width adjusts according to the screen size.
- The page loads at a 100% zoom level, providing a natural viewing experience.

3. Including Bootstrap in Your Project

To use Bootstrap, you need to link the Bootstrap CSS and JavaScript files. The easiest way is to use a CDN (Content Delivery Network):

```
<!-- Bootstrap CSS -->

<link rel="stylesheet"
href="https://cdn.jsdelivr.net/npm/bootstrap@5.3.2/dist/css/bootstrap.min.css">

<!-- Bootstrap JavaScript -->

<script
src="https://cdn.jsdelivr.net/npm/bootstrap@5.3.2/dist/js/bootstrap.bundle.min.js"></script>
```

Task 2: Grid system ,Dark mode , Progress bar, Nav Bar , Validation form(05/06/24)c

Progress Bar :

A Progress Bar in Bootstrap visually represents the completion status of a task or process. It is often used in loading screens, file uploads, and step-by-step processes.

```
<!DOCTYPE html>

<html lang="en">

<head>

<title>My Course Progress</title>

<meta charset="utf-8">

<meta name="viewport" content="width=device-width, initial-scale=1">

<link rel="stylesheet"
href="https://maxcdn.bootstrapcdn.com/bootstrap/4.3.1/css/bootstrap.min.css">

<script src="https://ajax.googleapis.com/ajax/libs/jquery/3.3.1/jquery.min.js">

</script>

<script src="https://cdnjs.cloudflare.com/ajax/libs/popper.js/1.14.7/umd/popper.min.js">

</script>

<script src="https://maxcdn.bootstrapcdn.com/bootstrap/4.3.1/js/bootstrap.min.js">

</script>

<style>

.progress {

margin-top: 20px;

}

h4 {

color: #4CAF50;

text-align: center;

}

.course-container {

margin-bottom: 30px;

}

.progress-bar {
```

```
        font-weight: bold;

        text-align: center;

    }

</style>

</head>

<body>

<div class="container">

<h2 class="text-center mt-4">Course Progress Tracker</h2>

<div class="course-container">

<h4>HTML</h4>

<div class="progress">

<div class="progress-bar bg-success" role="progressbar" style="width: 50%" aria-
valuenow="50" aria-valuemin="0" aria-valuemax="100">50%</div>

</div>

</div>

<div class="course-container">

<h4>CSS</h4>

<div class="progress">

<div class="progress-bar bg-info" role="progressbar" style="width: 80%" aria-
valuenow="80" aria-valuemin="0" aria-valuemax="100">80%</div>

</div>

</div>

<div class="course-container">

<h4>JavaScript</h4>

<div class="progress">

<div class="progress-bar bg-warning" role="progressbar" style="width: 60%" aria-
valuenow="60" aria-valuemin="0" aria-valuemax="100">60%</div>

</div>

</div>

<div class="course-container">

<h4>Bootstrap</h4>
```

```
<div class="progress">

<div class="progress-bar bg-primary" role="progressbar" style="width: 70%" aria-
valuenow="70" aria-valuemin="0" aria-valuemax="100">70%</div>

</div>

</div>

<div class="course-container">

<h4>Flutter</h4>

<div class="progress">

<div class="progress-bar bg-danger" role="progressbar" style="width: 40%" aria-
valuenow="40" aria-valuemin="0" aria-valuemax="100">40%</div>

</div>

</div>

<div class="course-container">

<h4>React.js</h4>

<div class="progress">

<div class="progress-bar bg-secondary" role="progressbar" style="width: 85%" aria-
valuenow="85" aria-valuemin="0" aria-valuemax="100">85%</div>

</div>

</div>

<div class="course-container">

<h4>Node.js</h4>

<div class="progress">

<div class="progress-bar bg-dark" role="progressbar" style="width: 55%" aria-
valuenow="55" aria-valuemin="0" aria-valuemax="100">55%</div>

</div>

</div>

</div>

</body>

</html>
```

OUTPUT:

Course Progress Tracker

HTML
50%

CSS
80%

JavaScript
60%

Bootstrap
70%

Flutter
40%

Dark Mode:

```html
<!DOCTYPE html>
<html lang="en">
<head>
<meta charset="UTF-8">
<meta name="viewport" content="width=device-width, initial-scale=1.0">
<title>Dark Mode</title>
<link rel="stylesheet"
href="https://cdn.jsdelivr.net/npm/bootstrap@4.5.2/dist/css/bootstrap.min.css">
<link rel="stylesheet" href="style.css">
<script src="https://code.jquery.com/jquery-3.5.1.min.js"></script>
<script>
$(document).ready(function(){
$('#toggleButton').click(function(){
$('body').toggleClass('dark-mode');
});
});
</script>
<style>
body {
background-color: white;
color: black;
transition: 0.5s;
}
body.dark-mode {
background-color: #121212;
color: white;
}
.container {
max-width: 500px;
margin-top: 100px;
```
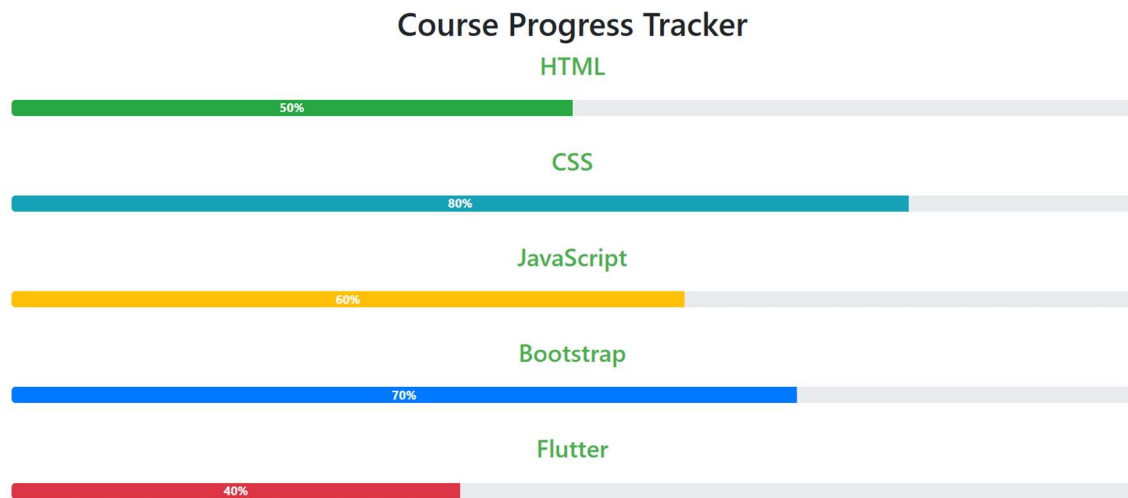
```css
padding: 30px;

border-radius: 8px;

text-align: center;

box-shadow: 0px 0px 10px rgba(0, 0, 0, 0.1);

background-color: #f8f9fa;

}

.dark-mode .container {

background-color: #333;

box-shadow: 0px 0px 10px rgba(255, 255, 255, 0.2);

}

.btn-toggle {

padding: 10px 20px;

font-size: 18px;

border-radius: 5px;

transition: 0.3s;

}
```
```html
</style>

</head>

<body>

<div class="container">

<h1>Dark Mode Toggle</h1>

<button id="toggleButton" class="btn btn-primary btn-toggle mt-3">Change Mode</button>

</div>

<script
src="https://cdn.jsdelivr.net/npm/bootstrap@4.5.2/dist/js/bootstrap.bundle.min.js"></script>

</body>

</html>
```

OUTPUT:
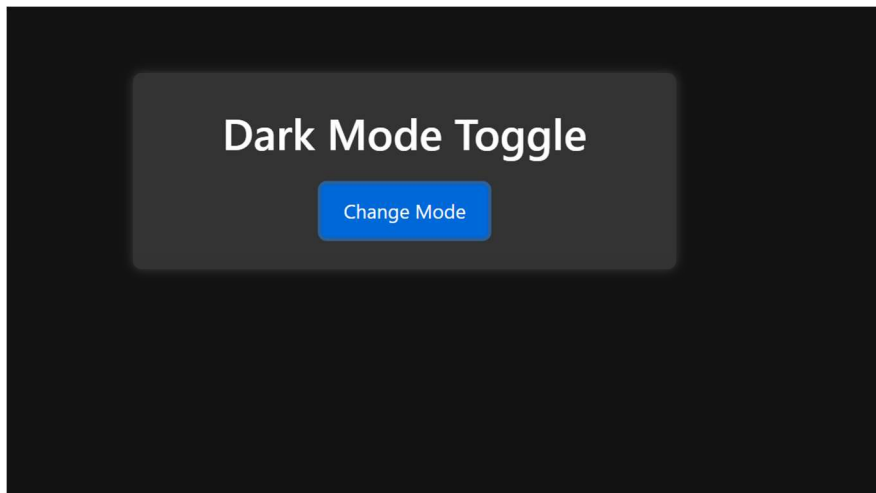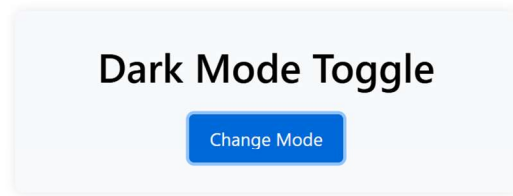
Grid Layout:

```html
<!DOCTYPE html>

<html lang="en">

<head>

<meta charset="UTF-8">

<meta name="viewport" content="width=device-width, initial-scale=1">

<title>Bootstrap Grid System</title>

<link rel="stylesheet"
href="https://maxcdn.bootstrapcdn.com/bootstrap/4.3.1/css/bootstrap.min.css">

<style>

.box {

background-color: #4CAF50;

color: white;

padding: 20px;

text-align: center;

margin-bottom: 10px;

border-radius: 5px;

}

</style>

</head>

<body>

<div class="container mt-4">

<h2 class="text-center">Bootstrap Grid System</h2>

<div class="row">
```

```html
<div class="col-md-4">

<div class="box">Column 1</div>

</div>

<div class="col-md-4">

<div class="box">Column 2</div>

</div>

<div class="col-md-4">

<div class="box">Column 3</div>

</div>

</div>

<div class="row">

<div class="col-md-6">

<div class="box">Column 1</div>

</div>

<div class="col-md-6">

<div class="box">Column 2</div>

</div>

</div>

<div class="row">

<div class="col-md-3">

<div class="box">Column 1</div>

</div>

<div class="col-md-3">
```

```html
<div class="box">Column 2</div>

</div>

<div class="col-md-3">

<div class="box">Column 3</div>

</div>

<div class="col-md-3">

<div class="box">Column 4</div>

</div>

</div>

</div>

</body>

</html>
```

OUTPUT:

Pagination:

```html
<!DOCTYPE html>

<html lang="en">

<head>

<meta charset="UTF-8">

<meta name="viewport" content="width=device-width, initial-scale=1.0">

<title>Dark Mode with Pagination</title>

<!-- Bootstrap CSS -->

<link rel="stylesheet"
href="https://cdn.jsdelivr.net/npm/bootstrap@5.3.0/dist/css/bootstrap.min.css">

<style>

/* Dark mode styles */

body.dark-mode {

background-color: #121212;

color: white;

}

.dark-mode .table {

color: white;

}

.dark-mode .breadcrumb a {

color: #bbb;

}

.dark-mode .pagination .page-link {

background-color: #333;

color: white;

border-color: #555;
```
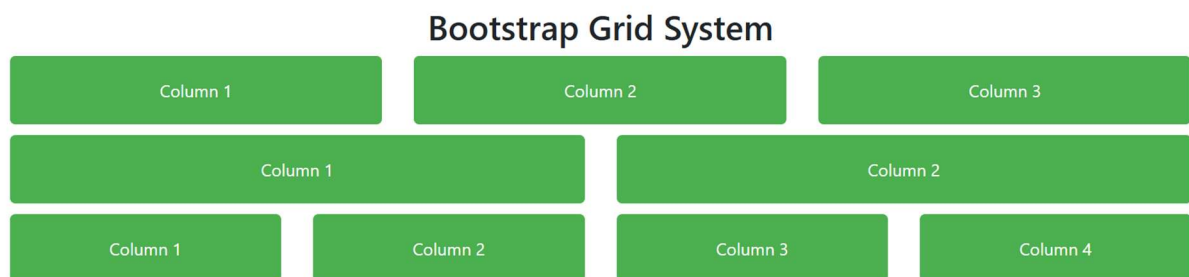
```
}
.dark-mode .pagination .page-item.active .page-link {
background-color: #007bff;
border-color: #007bff;
}
</style>
<script src="https://code.jquery.com/jquery-3.5.1.min.js"></script>
</head>
<body>
<div class="container">
<h2 class="mt-3 mb-3 text-center"> Pagination with Dark Mode </h2>
<!-- Dark Mode Toggle Button -->
<div class="text-center mb-3">
<button class="btn btn-dark" id="toggleDarkMode">Toggle Dark Mode</button>
</div>
<div class="row">
<div class="col-md-6 py-3 mx-auto">
<nav>
<ol class="breadcrumb">
<li class="breadcrumb-item"><a href="#">Internship</a></li>
<li class="breadcrumb-item"><a href="#">Day2</a></li>
<li class="breadcrumb-item active">Task3</li>
</ol>
</nav>
```

```html
<table class="table table-striped table-bordered">
<thead>
<tr>
<th>Row</th>
<th>First Name</th>
<th>Last Name</th>
<th>Email</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Ram</td>
<td>Kumar</td>
<td>ramkumar@mail.com</td>
</tr>
<tr>
<td>2</td>
<td>Salman</td>
<td>Khan</td>
<td>salmankhan@mail.com</td>
</tr>
</tbody>
</table>
<nav>
```

```html
<ul class="pagination justify-content-end">

<li class="page-item disabled">

<a href="#" class="page-link">Previous</a>

</li>

<li class="page-item active">

<a href="#" class="page-link">1</a>

</li>

<li class="page-item">

<a href="#" class="page-link">2</a>

</li>

<li class="page-item">

<a href="#" class="page-link">3</a>

</li>

<li class="page-item">

<a href="#" class="page-link">4</a>

</li>

<li class="page-item">

<a href="#" class="page-link">Next</a>

</li>

</ul>

</nav>

</div>

</div>

</div>

<!-- Dark Mode Script -->
```

```
<script>

$(document).ready(function() {

$("#toggleDarkMode").click(function() {

$("body").toggleClass("dark-mode");

});

});

</script>

</body>

</html>
```

OUTPUT:

NAV BAR:

```html
<!DOCTYPE html>
<html lang="en">
<head>
    <meta charset="UTF-8">
    <meta name="viewport" content="width=device-width, initial-scale=1.0">
    <title>Navbar</title>


    <link rel="stylesheet"
href="https://maxcdn.bootstrapcdn.com/bootstrap/4.3.1/css/bootstrap.min.css">
    <script src="https://code.jquery.com/jquery-3.5.1.min.js"></script>
    <script
src="https://cdnjs.cloudflare.com/ajax/libs/popper.js/1.14.7/umd/popper.min.js"></script>
    <script
src="https://maxcdn.bootstrapcdn.com/bootstrap/4.3.1/js/bootstrap.min.js"></script>


    <style>
        .container {
            border: 2px solid black;
        }
    </style>
</head>
<body>
    <div class="container mb-5">
        <h2 class="py-3 text-center">Navbar</h2>
        <div class="row py-3">
            <div class="col">
                <nav class="navbar navbar-expand-sm navbar-dark bg-dark">
                    <button class="navbar-toggler" type="button" data-toggle="collapse" data-target="#mynavbar">
                        <span class="navbar-toggler-icon"></span>
                    </button>
```

```html
        <div class="collapse navbar-collapse" id="mynavbar">
          <ul class="navbar-nav mr-auto">
            <li class="nav-item">
              <a href="#" class="nav-link">Home</a>
            </li>
            <li class="nav-item dropdown">
              <a href="#" class="nav-link dropdown-toggle" data-toggle="dropdown">
                About Us
              </a>
              <div class="dropdown-menu">
                <a href="#" class="dropdown-item">Link One</a>
                <a href="#" class="dropdown-item">Link Two</a>
                <a href="#" class="dropdown-item">Link Three</a>
              </div>
            </li>
            <li class="nav-item active">
              <a href="#" class="nav-link">Gallery</a>
            </li>
            <li class="nav-item">
              <a href="#" class="nav-link">Blog</a>
            </li>
          </ul>
          <form class="form-inline">
            <input type="search" class="form-control mr-sm-2" placeholder="Search">
            <button class="btn btn-outline-success my-2 my-sm-0"
type="submit">Search</button>
          </form>
        </div>
      </nav>
    </div>
  </div>
```

```
    </div>
</body>
</html>
```

OUTPUT:

Navbar

Home About Us ▾ **Gallery** Blog   [Search] [Search]

Task 3: Flutter installation &configuration (05/06/24)

Flutter Installation and Configuration on Windows:

Flutter is a powerful UI toolkit by Google for developing cross-platform applications. Below are the steps to install and configure Flutter on Windows.

1. System Requirements

Before installing Flutter, ensure your system meets these requirements:

- Windows 10 or later (64-bit)
- At least 8GB RAM (recommended)
- 10GB of free disk space
- Git for Windows
- PowerShell 5.0 or later

2. Download and Install Flutter

Step 1: Download Flutter SDK

- Go to the official Flutter website: Flutter SDK
- Download the latest stable version of the Flutter SDK (Windows).
- Extract the downloaded ZIP file to a suitable location (e.g., C:\flutter).
- Set Up Environment Variables

Step 2: Add Flutter to System Path

- Open File Explorer, navigate to the Flutter directory (C:\flutter\bin).
- Copy the path (C:\flutter\bin).
- Search Environment Variables in the Start menu and open Edit the system environment variables.
- Click on Environment Variables > Select Path under System Variables > Click Edit.
- Click New, paste the copied path, and click OK to save.
- Install Required Tools

Step 3: Install Git

- Download and install Git from Git for Windows.
- Restart your system to apply changes.
- Verify Installation

Step 4: Check Flutter Installation

- Open Command Prompt (cmd) or PowerShell.
- Run the following command to check if Flutter is installed correctly:
- nginx
- flutter doctor

This command checks dependencies and lists missing components.

Step 5: Install Android Studio (for Android Development)

- Download Android Studio from Android Developer Website.
- Install it and ensure the Android SDK, Emulator, and Platform Tools are installed.
- Open Android Studio and go to Settings → Plugins → Install Flutter and Dart plugins.

Step 6:. Configure Flutter for Android Development

- Set Up Android SDK
- flutter config --android-sdk "C:\Users\YourUsername\AppData\Local\Android\Sdk"
- Accept Android licenses:
- flutter doctor --android-licenses
- Run flutter doctor again to verify everything is set up.
- Run Your First Flutter App

Step 7: Create and Run a Project

- Open a terminal or Command Prompt.
- Create a new Flutter project:

        flutter create myapp

Task 4: creating project and perform task(07/06/24)

Create a New Flutter Project:

Step 1: Open Command Prompt or Terminal

- Open Command Prompt (cmd) or PowerShell.
- Navigate to the directory where you want to create your project, for example:
- cd D:/FlutterProjects

Step 2: Create a Flutter Project

- Run the following command to create a new Flutter project:

    Command : flutter create myapp

- Navigate into the project folder:

    Command : cd myapp

- Open the project in Visual Studio Code or Android Studio:
- start android studio .

Step 3: Understand Flutter Project Structure

- After creating the project, you will see the following structure:

    lib/ → Contains the main Dart files for your app.

    android/ → Contains Android-specific files.

    ios/ → Contains iOS-specific files.

    pubspec.yaml → Configuration file for dependencies and assets.

    The main file to work with is lib/main.dart.

Step 4: Modify the Default Flutter App

    Open lib/main.dart.

- Replace the existing code with this simple counter app:

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

void main() {

  runApp(MyApp());

}

class MyApp extends StatelessWidget {

 @override

 Widget build(BuildContext context) {

   return MaterialApp(
```

```dart
      home: MyHomePage(),
      debugShowCheckedModeBanner: false,
    );
  }
}
class MyHomePage extends StatefulWidget {
 @override
 _MyHomePageState createState() => _MyHomePageState();
}
class _MyHomePageState extends State<MyHomePage> {
 int count = 0;
 void incrementCounter() {
  setState(() {
   count++;
  });
 }
 Widget build(BuildContext context) {
  return Scaffold(
    appBar: AppBar(title: Text("Counter App")),
    body: Center(
     child: Column(
      mainAxisAlignment: MainAxisAlignment.center,
      children: [
       Text("You have pressed the button:", style: TextStyle(fontSize: 18)),
       Text("$count", style: TextStyle(fontSize: 30, fontWeight: FontWeight.bold)),
       SizedBox(height: 20),
       ElevatedButton(
        onPressed: incrementCounter,
        child: Text("Increment"),
       )
```

```
        ],
      ),
    ),
  );
}
}
```

Step 5:. Run the Flutter App

- Run on an Emulator or Physical Device
- Ensure that an emulator is running or a physical device is connected.
- Run the app using the command:

      flutter run

- The app should launch, displaying a counter with a button to increment it.

Step 6: Performing Tasks in Flutter

Once the project is created, you can perform various tasks such as:

- Adding New Screens

You can add a new screen (lib/second_screen.dart) and navigate between pages using Navigator.push().

- Working with API

You can fetch data from an API using the http package. Add the dependency in pubspec.yaml:

    dependencies:

     flutter:

      sdk: flutter

     http: ^0.13.3

Task 5 : TO DO App in Flutter(08/06/24 T0 12/06/24)

CODE:

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

import 'package:shared_preferences/shared_preferences.dart';


void main() {
  runApp(const TodoApp());
}
class TodoApp extends StatelessWidget {
  const TodoApp({Key? key}) : super(key: key);
  @override
  Widget build(BuildContext context) {
    return MaterialApp(
      debugShowCheckedModeBanner: false,
      title: 'To-Do List',
      theme: ThemeData.light(),
      darkTheme: ThemeData.dark(),
      themeMode: ThemeMode.system,
      home: const TodoListScreen(),
    );
  }
}
class TodoListScreen extends StatefulWidget {
  const TodoListScreen({Key? key}) : super(key: key);
  @override
  TodoListScreenState createState() => TodoListScreenState();
}
class TodoListScreenState extends State<TodoListScreen> {
  List<String> _tasks = [];
  final TextEditingController _taskController = TextEditingController();
```

```dart
  int? _editingIndex;
  @override
  void initState() {
    super.initState();
    _loadTasks();
  }


  Future<void> _loadTasks() async {
    final prefs = await SharedPreferences.getInstance();
    setState(() {
      _tasks = prefs.getStringList('tasks') ?? [];
    });
  }
  Future<void> _saveTasks() async {
    final prefs = await SharedPreferences.getInstance();
    prefs.setStringList('tasks', _tasks);
  }
  void _addOrUpdateTask() {
    if (_taskController.text.isNotEmpty) {
      setState(() {
        if (_editingIndex == null) {
          _tasks.add(_taskController.text);
        } else {
          _tasks[_editingIndex!] = _taskController.text;
          _editingIndex = null;
        }
        _taskController.clear();
        _saveTasks();
      });
    }
```

```dart
    }

  void _deleteTask(int index) {
   String deletedTask = _tasks[index];
   setState(() {
    _tasks.removeAt(index);
    _saveTasks();
   });
   ScaffoldMessenger.of(context).showSnackBar(
    SnackBar(
      content: Text('Task deleted'),
      action: SnackBarAction(
       label: 'Undo',
       onPressed: () {
        setState(() {
          _tasks.insert(index, deletedTask);
          _saveTasks();
        });
       },
      ),
    ),
   );
  }

  void _editTask(int index) {
   setState(() {
    _taskController.text = _tasks[index];
    _editingIndex = index;
   });
  }
```

```dart
@override
Widget build(BuildContext context) {
  return Scaffold(
    appBar: AppBar(title: const Text('To-Do List')),
    body: Column(
      children: [
        Padding(
          padding: const EdgeInsets.all(16.0),
          child: Row(
            children: [
              Expanded(
                child: TextField(
                  controller: _taskController,
                  decoration: const InputDecoration(
                    labelText: 'Enter Task',
                    border: OutlineInputBorder(),
                  ),
                ),
              ),
              const SizedBox(width: 10),
              ElevatedButton(
                onPressed: _addOrUpdateTask,
                child: Text(_editingIndex == null ? 'Add' : 'Update'),
              ),
            ],
          ),
        ),
        Expanded(
          child: ListView.builder(
```

```
        itemCount: _tasks.length,
        itemBuilder: (context, index) {
         return Card(
          margin: const EdgeInsets.symmetric(horizontal: 16, vertical: 4),
          child: ListTile(
           title: Text(_tasks[index]),
           trailing: Row(
            mainAxisSize: MainAxisSize.min,
            children: [
             IconButton(
              icon: const Icon(Icons.edit, color: Colors.blue),
              onPressed: () => _editTask(index),
             ),
             IconButton(
              icon: const Icon(Icons.delete, color: Colors.red),
              onPressed: () => _deleteTask(index),
             ),
            ],
           ),
          ),
         );
        },
       ),
      )
     ],
    ),
   );
  }
}
```

OUTPUT:

To-Do List

Enter Task   Add

Food   ✏ 🗑

To-Do List

Enter Task
College   Update

Food   ✏ 🗑

drink   ✏ 🗑

Class   ✏ 🗑

College   ✏ 🗑

Task 6: Working with API (13/06/24)

CODE:

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


void main() {
  runApp(const ApiDemoApp());
}


class ApiDemoApp extends StatelessWidget {
  const ApiDemoApp({super.key});


  @override
  Widget build(BuildContext context) {
    return MaterialApp(
      debugShowCheckedModeBanner: false,
      title: 'API Demo',
      theme: ThemeData(
        primarySwatch: Colors.blue,
      ),
      home: const UserListScreen(),
    );
  }
}
class UserListScreen extends StatefulWidget {
  const UserListScreen({super.key});
  @override
  _UserListScreenState createState() => _UserListScreenState();
}
class _UserListScreenState extends State<UserListScreen> {
```

```dart
List<dynamic> users = [];
bool isLoading = true;
String errorMessage = '';
@override
void initState() {
  super.initState();
  fetchUsers();
}
Future<void> fetchUsers() async {
  try {
    var response = await Dio().get('https://jsonplaceholder.typicode.com/users');
    setState(() {
      users = response.data;
      isLoading = false;
    });
  } catch (e) {
    setState(() {
      isLoading = false;
      errorMessage = 'Failed to load data';
    });
  }
}
@override
Widget build(BuildContext context) {
  return Scaffold(
    appBar: AppBar(title: const Text('User List')),
    body: isLoading
        ? const Center(child: CircularProgressIndicator())
        : errorMessage.isNotEmpty
        ? Center(
```

```dart
    child: Column(
     mainAxisAlignment: MainAxisAlignment.center,
     children: [
      Text(errorMessage, style: const TextStyle(color: Colors.red)),
      const SizedBox(height: 16),
      ElevatedButton(
       onPressed: fetchUsers,
       child: const Text('Retry'),
      ),
     ],
    ),
  )
     : ListView.builder(
    itemCount: users.length,
    itemBuilder: (context, index) {
     var user = users[index];
     return Card(
      margin: const EdgeInsets.symmetric(horizontal: 16, vertical: 8),
      child: ListTile(
       leading: CircleAvatar(
        child: Text(user['name'][0]), // First letter of name
       ),
       title: Text(user['name']),
       subtitle: Text(user['email']),
       onTap: () => _showUserDetails(user),
      ),
     );
    },
   ),
  );
```

```dart
    }
  void _showUserDetails(dynamic user) {
   showDialog(
     context: context,
     builder: (BuildContext context) {
      return AlertDialog(
        title: Text(user['name']),
        content: Column(
         mainAxisSize: MainAxisSize.min,
         children: [
           Text('Username: ${user['username']}'),
           Text('Email: ${user['email']}'),
           Text('Phone: ${user['phone']}'),
           Text('Website: ${user['website']}'),
          ],
        ),
        actions: [
         TextButton(
           onPressed: () => Navigator.of(context).pop(),
           child: const Text('Close'),
         ),
        ],
      );
     },
   );
  }
}
```

OUTPUT :

User List

L   Leanne Graham
      Sincere@april.biz

E   Ervin Howell
      Shanna@melissa.tv

Leanne Graham

Username: Bret
Email: Sincere@april.biz
Phone: 1-770-736-8031 x56442
Website: hildegard.org

Close

C   Clementine Bauch
      Nathan@yesenia.net

P   Patricia Lebsack
      Julianne.OConner@kory.org

C   Chelsey Dietrich
      Lucio_Hettinger@annie.ca

Task 7: Create a news app using API(14/06/24 to 18/06/24)

CODE:

main.dart

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

// import 'package:news/helper/webview.dart';

import 'package:news/nav_bar.dart';

// import 'nav_bar.dart';


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


class MyApp extends StatelessWidget {
  const MyApp({super.key});



  @override
  Widget build(BuildContext context) {
    return MaterialApp(
      title: 'Flutter Demo',
      debugShowCheckedModeBanner: false,
      theme: ThemeData(

        primaryColor: const Color.fromRGBO(0, 0, 0, 1),
        useMaterial3: false,
      ),


      home: const NavBarPage(),
    );
  }
```

```
    }


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

import 'package:news/pages/home_page.dart';

import 'package:news/pages/category_list_page.dart';

import 'package:news/pages/country_list_page.dart';

import 'package:google_nav_bar/google_nav_bar.dart';


class NavBarPage extends StatefulWidget {
  const NavBarPage({super.key});


  @override
  State<NavBarPage> createState() => _NavBarPageState();
}


class _NavBarPageState extends State<NavBarPage> {

  final List<Widget> pageList= const [
    HomePage(defaultContryCode: 'in',), // default india
    HeadlinesPage(),
    CountryList()
  ];
  int currentIndex=0;


  void changeIndex(int index){
    setState(() {
      currentIndex=index;
    });
  }
```

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

    body: pageList[currentIndex],

    bottomNavigationBar: Padding(
      padding: const EdgeInsets.symmetric(vertical:8, horizontal: 12),
      child: GNav(
        gap: 8,
        activeColor: const Color.fromRGBO(239, 83, 80, 1),
        tabActiveBorder: Border.all(color: Colors.red.shade400, width: 1),
        padding: const EdgeInsets.all(10),

        selectedIndex: currentIndex,
        onTabChange: changeIndex,
        tabs: const [
          GButton(
            icon: Icons.home_rounded, text: 'Home',
          ),
          GButton(
            icon: Icons.view_headline_rounded, text: 'Categories',
          ),
          GButton(
            icon: Icons.travel_explore_rounded, text: 'Country',
          ),
        ]
      ),
    ),
```

```
    );
  }
}
```

Cetorigy_list_page.dart

```dart
import 'package:flutter/material.dart';
import 'package:news/helper/category.dart';


class HeadlinesPage extends StatefulWidget {
  const HeadlinesPage({super.key});


  @override
  State<HeadlinesPage> createState() => _HeadlinesPageState();
}


class _HeadlinesPageState extends State<HeadlinesPage> {
  @override
  Widget build(BuildContext context) {
    return DefaultTabController(
      length: 7,
      child: Scaffold(
        appBar: AppBar(
          title: const Text(
            'Category',
            style: TextStyle(
                fontSize: 25, fontWeight: FontWeight.w600, color: Colors.white),
          ),
          toolbarHeight: 65,
          centerTitle: true,
          elevation: 0,
          backgroundColor: Colors.red.shade400,
```

```dart
    ),
    body: const Column(
      children: [
        TabBar(
          isScrollable: true,
          indicatorColor: Color.fromRGBO(239, 83, 80, 1),
          padding: EdgeInsets.only(top: 4),
          unselectedLabelColor: Colors.black,
          labelColor: Color.fromRGBO(239, 83, 80, 1),
          labelStyle:
            TextStyle(fontSize: 20, fontWeight: FontWeight.w700),
          tabs: [
            Tab(
              child: Text('Science'),
            ),
            Tab(
              child: Text('Business'),
            ),
            Tab(
              child: Text('Technology'),
            ),
            Tab(
              child: Text('Sports'),
            ),
            Tab(
              child: Text('Health'),
            ),
            Tab(
              child: Text('Entertainment'),
            ),
```

```
            Tab(
              child: Text('General'),
            ),
          ]),
        Expanded(
          child: TabBarView(children: [
            Expanded(child: CategoryNews(category: 'science')),
            Expanded(child: CategoryNews(category: 'Business')),
            Expanded(child: CategoryNews(category: 'Technology')),
            Expanded(child: CategoryNews(category: 'Sports')),
            Expanded(child: CategoryNews(category: 'Health')),
            Expanded(child: CategoryNews(category: 'Entertainment')),
            Expanded(child: CategoryNews(category: 'General')),
          ]),
        )
      ],
    ),
  ),
);
 }
}
```

Country_list_page.dart

```
import 'package:flutter/material.dart';
import 'package:news/helper/country_headlines.dart';


class CountryList extends StatelessWidget {
 const CountryList({super.key});


 @override
```

```dart
Widget build(BuildContext context) {
  return DefaultTabController(
    length: 7,
    child: Scaffold(


      appBar: AppBar(title: const Text('Country Headlines', style: TextStyle(fontSize: 25,
fontWeight: FontWeight.w600, color: Colors.white),),),
        centerTitle: true,
        toolbarHeight: 65,
        elevation: 0,
        backgroundColor: Colors.red.shade400,
      ),


      body: const Column(
        children: [
          TabBar(
            isScrollable: true,
            indicatorColor: Color.fromRGBO(239, 83, 80, 1),
            padding: EdgeInsets.only(top: 4),
            labelColor: Color.fromRGBO(239, 83, 80, 1),
            unselectedLabelColor: Colors.black,
            labelStyle: TextStyle(fontSize: 20, fontWeight: FontWeight.w700),


            tabs:[
              Tab(
                child: Text('USA'),
              ),
              Tab(
                child: Text('England'),
              ),
              Tab(
```

```
           child: Text('China'),
         ),
       Tab(
        child: Text('Canada'),
       ),
       Tab(
        child: Text('Japan'),
       ),
       Tab(
        child: Text('France'),
       ),
       Tab(
        child: Text('Russia'),
       ),
     ]
    ),

    Expanded(
     child: TabBarView(
       children: [
        Expanded(
          child: CountryHeadlines(countryCode: 'us')
        ),
        Expanded(
          child: CountryHeadlines(countryCode: 'gb')
        ),
        Expanded(
          child: CountryHeadlines(countryCode: 'cn')
        ),
        Expanded(
```

```
                child: CountryHeadlines(countryCode: 'ca')
              ),
              Expanded(
                child: CountryHeadlines(countryCode: 'jp')
              ),
              Expanded(
                child: CountryHeadlines(countryCode: 'fr')
              ),
              Expanded(
                child: CountryHeadlines(countryCode: 'ru')
              ),
            ]
          ),
        )
      ],
    ),
   ),
  );
 }
}
```

home_page.dart

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

import 'package:news/helper/country_headlines.dart';

import '../helper/custom_search.dart';


class HomePage extends StatefulWidget {
  const HomePage({super.key, required this.defaultContryCode});


  final String defaultContryCode;
```

```dart
  @override
  State<HomePage> createState() => _HomePageState();
}


class _HomePageState extends State<HomePage> {

  @override
  Widget build(BuildContext context) {
   return Scaffold(
     appBar: AppBar(
       centerTitle: true,
       toolbarHeight: 65,
       backgroundColor: const Color.fromRGBO(239, 83, 80, 1), //shade300
       title: const Text(
        'Daily Bugle',
        style: TextStyle(
           fontSize: 25, fontWeight: FontWeight.w600, color: Colors.white),
       ),
       scrolledUnderElevation: 5.0,
       shadowColor: const Color.fromRGBO(239, 83, 80, 1),

       actions: [
        Padding(
          padding: const EdgeInsets.only(right: 5),
          child: IconButton(
            alignment: Alignment.centerRight,
            onPressed: () {
             showSearch(
               context: context,
               delegate: CustomSearchDelegate(),
```

```dart
            );
          },
          icon: const Icon(Icons.search_rounded)),
        ),
        // Search Icon
      ],
    ),
    body: RefreshIndicator(
      onRefresh:() async {
        await Future.delayed(const Duration(seconds: 1));
        setState(() {

        });
      },// onRefresh
      color: Colors.red.shade400,
      displacement: 20,
      triggerMode: RefreshIndicatorTriggerMode.anywhere,
      child: CountryHeadlines(countryCode: widget.defaultContryCode)
    )
  );
 }
}
```
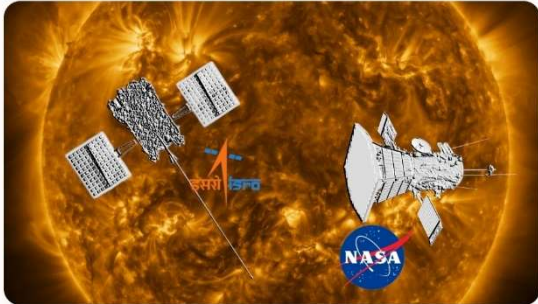
OUTPUT:

Conclusion of the Internship :

- This 15-day internship at TechnoGuide Infosoft Pvt. Ltd. provided valuable hands-on experience in Bootstrap for web development and Flutter for mobile application development. The structured learning approach allowed for practical exposure to modern frameworks, enhancing both technical proficiency and problem-solving abilities.

- Through this internship, I gained insights into responsive web design, API integration, and cross-platform app development, which will be beneficial for my future career in web and mobile app development. Additionally, working on real-world projects improved my ability to adapt to industry standards and work in a collaborative environment.

- Overall, this internship was an enriching experience, equipping me with essential technical skills and reinforcing my confidence in tackling complex development challenges.