**Experiment 3**

1. **Design a responsive UI that adapts to different screen sizes.**
2. **Implement media queries and breakpoints for responsiveness.**

**Aim:**

To design and implement a responsive UI that adapts to different screen sizes using Flutter in Android Studio, it includes using media queries and breakpoints for achieving responsiveness.

**Objective:**

* To understand the concept of responsive.
* To utilize Flutter's features like media queries and layout.
* To implement breakpoints that allow the application to adjust its layout based on different screen sizes.

**Procedure:**

Step 1:

Open the Android Studio and select new flutter file.

Step 2:

Write a program in application.

Step 3:

Choose a device Chrome(web) and run it.

**Code Snippet:**

import 'package:flutter/material.dart';  
  
void main() {  
 runApp(MyApp());  
}  
  
class MyApp extends StatelessWidget {  
 Widget build(BuildContext context) {  
 return MaterialApp(  
 title: 'Responsive News App',  
 theme: ThemeData(primarySwatch: Colors.*blue*),  
 home: NewsHomePage(),  
 );  
 }  
}  
  
class NewsHomePage extends StatelessWidget {  
 var articles = [  
 {  
 "title": "Breaking News: Market Update",  
 "summary": "The stock market faced unprecedented highs...",  
 "imageUrl": "https://instructor-academy.onlinecoursehost.com/content/images/size/w2000/2023/05/How-to-Create-an-Online-Course-For-Free--Complete-Guide--6.jpg"  
 },  
 {  
 "title": "Sports: Local Team Wins Championship",  
 "summary": "An exciting game concluded with a victory...",  
 "imageUrl": "https://images.indianexpress.com/2023/10/INDIAN-CRICKET-TEAM-CROP.png?w=640"  
 },  
 {  
 "title": "Technology: New Smartphone Release",  
 "summary": "The latest smartphone model is out...",  
 "imageUrl": "https://images.samsung.com/is/image/samsung/assets/levant/2407/pcd/smp/New-PCD\_Galaxy-Z\_Curation-KV\_1440x640\_pc.jpg?1440\_640\_JPG"  
 },  
 {  
 "title": "Health: Tips for a Healthy Lifestyle",  
 "summary": "Experts share the best tips to stay healthy...",  
 "imageUrl": "https://www.shutterstock.com/image-photo/health-tips-conceptual-healthy-fresh-260nw-707978182.jpg"  
 },  
 ];  
 Widget build(BuildContext context) {  
 var screenWidth = MediaQuery.*of*(context).size.width;  
  
 return Scaffold(  
 appBar: AppBar(title: Text('Responsive News App')),  
 body: screenWidth < 600  
 ? ListView.builder(  
 itemCount: articles.length,  
 itemBuilder: (context, index) => ArticleCard(article: articles[index]),  
 )  
 : GridView.builder(  
 gridDelegate: SliverGridDelegateWithFixedCrossAxisCount(  
 crossAxisCount: 2,  
 crossAxisSpacing: 10,  
 mainAxisSpacing: 10,  
 ),  
 itemCount: articles.length,  
 itemBuilder: (context, index) => ArticleCard(article: articles[index]),  
 ),  
 );  
 }  
}  
  
class ArticleCard extends StatelessWidget {  
 final Map<String, String> article;  
 ArticleCard({required this.article});  
  
 Widget build(BuildContext context) {  
 var screenWidth = MediaQuery.*of*(context).size.width;  
  
 return Card(  
 margin: EdgeInsets.all(10),  
 child: Padding(  
 padding: EdgeInsets.all(10),  
 child: Column(  
 crossAxisAlignment: CrossAxisAlignment.center,  
 children: [  
 Image.network(article['imageUrl']!, height: 150, fit: BoxFit.cover),  
 SizedBox(height: 10),  
 Text(  
 article['title']!,  
 style: TextStyle(  
 fontSize: screenWidth < 600 ? 18 : 22,  
 fontWeight: FontWeight.*bold*,  
 ),  
 ),  
 SizedBox(height: 5),  
 Text(  
 article['summary']!,  
 style: TextStyle(fontSize: screenWidth < 600 ? 14 : 16),  
 ),  
 ],  
 ),  
 ),  
 );  
 }  
}

**Conclusion:**

Designed and implemented a responsive UI using Flutter in Android Studio, by utilizing media queries and defining breakpoints.