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## LAB 10

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**Name : Muhammad Hammad**  
**Sap id : 56765**  
**Course : Mobile App Development**  
**Section: SE 5-2**

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**Presented to :**

Sir. Waqar Arshad



Git :

## Lab 10

### **Objectives :**

To implement and demonstrate scrolling lists and UI effects in Flutter, including: a vertical list, a horizontal scrolling list, a collapsing header using SliverAppBar, and an AnimatedList for add/remove item animations.

#### ➤ **Vertical List**

Observation: Items display in a vertical list and scroll smoothly. ListView.builder successfully builds only visible items for efficiency.

##### *Topics Covered:*

- Understanding the structure and purpose of ListView in Flutter.
- Difference between ListView and ListView.builder.
- Use of itemCount and itemBuilder parameters to generate list items dynamically.
- Creating scrollable layouts in Flutter.
- Using widgets like Card, ListTile, and CircleAvatar to design list items.
- Handling padding, margins, and scroll behavior in vertical lists.



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## Scrolling Lists & Effects

Vertical    Horizontal    Effect    Animated

1 Item 1  
Subtitle for Item 1

2 Item 2  
Subtitle for Item 2

3 Item 3  
Subtitle for Item 3

4 Item 4  
Subtitle for Item 4

5 Item 5  
Subtitle for Item 5

6 Item 6  
Subtitle for Item 6

7 Item 7  
Subtitle for Item 7

8 Item 8

## Scrolling Lists & Effects

Vertical    Horizontal    Effect    Animated

6 Subtitle for Item 6

7 Item 7  
Subtitle for Item 7

8 Item 8  
Subtitle for Item 8

9 Item 9  
Subtitle for Item 9

10 Item 10  
Subtitle for Item 10

11 Item 11  
Subtitle for Item 11

12 Item 12  
Subtitle for Item 12

13 Item 13  
Subtitle for Item 13

## ➤ Horizontal List

Observation: Side-scrolling cards appear within a fixed height. Cards scroll horizontally and maintain consistent size.

### *Topics Covered:*

- Use of ListView with scrollDirection: Axis.horizontal for sideways scrolling.
- Designing horizontally scrollable cards with Container and BoxDecoration.



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- Managing fixed height using SizedBox to maintain uniform item layout.
- Understanding spacing with separatorBuilder and SizedBox(width: 12).
- Building interactive, space-efficient horizontal lists for compact UI sections.

### Scrolling Lists & Effects

Vertical    Horizontal    Effect    Animated

Card 1

Card 2

### Scrolling Lists & Effects

Vertical    Horizontal    Effect    Animated

Card 4

Card 5



## ➤ Sliver AppBar Effect

Observation: The header expands and collapses while content scrolls under it — demonstrating a collapsing toolbar effect.

### *Topics Covered:*

- Implementation of CustomScrollView to create advanced scroll effects.
- Using SliverAppBar for collapsible headers with background color/gradient.
- Applying FlexibleSpaceBar to show title and background effects during scroll.
- Understanding SliverList for combining app bars with scrollable lists.
- Creating visually engaging scrollable layouts for app dashboards or profiles.

The image contains two side-by-side screenshots of a mobile application interface. Both screenshots have a light pink header bar with four tabs: 'Vertical', 'Horizontal', 'Effect' (which is bolded), and 'Animated'.  
  
The left screenshot shows a purple 'Collapsing Header' at the top. Below it is a list of items labeled 'Sliver Item 1' through 'Sliver Item 7', each with a 'Details for Sliver Item' link.  
  
The right screenshot shows a similar interface but with a larger, more detailed 'Collapsing Header' at the top. This header has a purple gradient background and contains the text 'Collapsing Header'. Below the header is a list of items labeled 'Sliver Item 1' through 'Sliver Item 8', each with a 'Details for Sliver Item' link.

Category	Sliver Item	Details
Left Screenshot	1	Details for Sliver Item 1
	2	Details for Sliver Item 2
	3	Details for Sliver Item 3
	4	Details for Sliver Item 4
	5	Details for Sliver Item 5
	6	Details for Sliver Item 6
	7	Details for Sliver Item 7
Right Screenshot	1	Details for Sliver Item 1
	2	Details for Sliver Item 2
	3	Details for Sliver Item 3
	4	Details for Sliver Item 4
	5	Details for Sliver Item 5
	6	Details for Sliver Item 6
	7	Details for Sliver Item 7
	8	Details for Sliver Item 8



## ➤ AnimatedList Add/Remove

Observation: When adding, new items slide into the list; when removing, items animate out. This demonstrates insertItem and removeItem usage.

### *Topics Covered:*

- Using AnimatedList widget for dynamic list operations.
- Adding items with `_listKey.currentState?.insertItem()`.
- Removing items with `_listKey.currentState?.removeItem()`.
- Implementing SizeTransition for smooth visual effects during changes.
- Managing list data updates with `setState` and observing UI reactivity.

Scrolling Lists & Effects

Vertical	Horizontal	Effect	Animated
			<u>Animated</u>
+ Add Total: 5			
1	Entry 1		
2	Entry 2		
3	Entry 3		
4	Entry 4		
5	Entry 5		

Scrolling Lists & Effects

Vertical	Horizontal	Effect	Animated
			<u>Animated</u>
+ Add Total: 5			
1	Entry 1		
2	Entry 3		
3	Entry 4		
4	Entry 5		