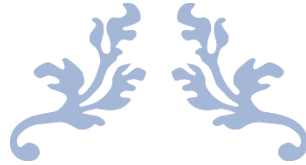




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LAB 10



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Course : Mobile App Development

Section: SE 5-2

Presented to :

Sir. Waqar Arshad



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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 Animation

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 Animation

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:

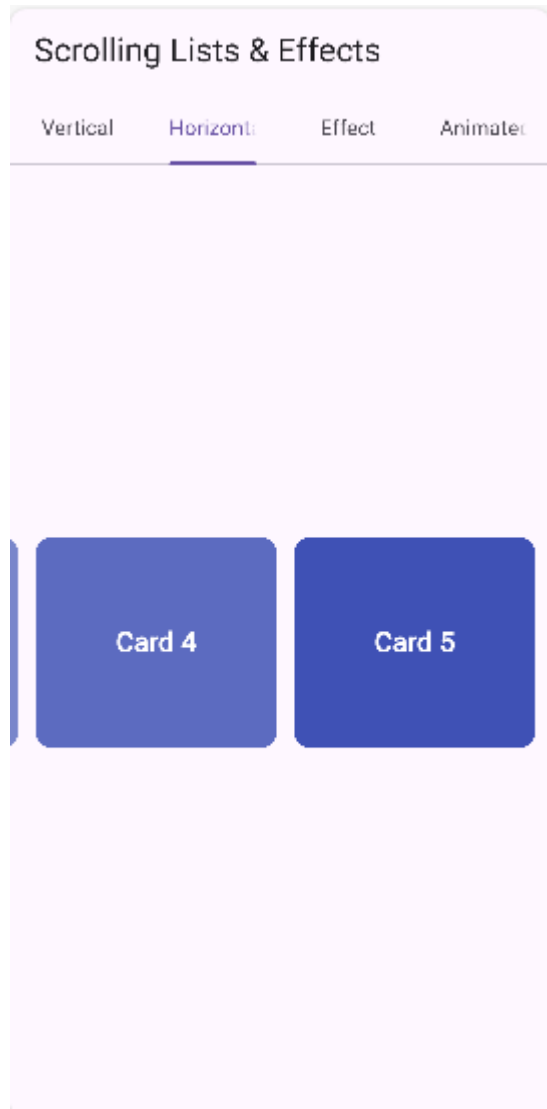
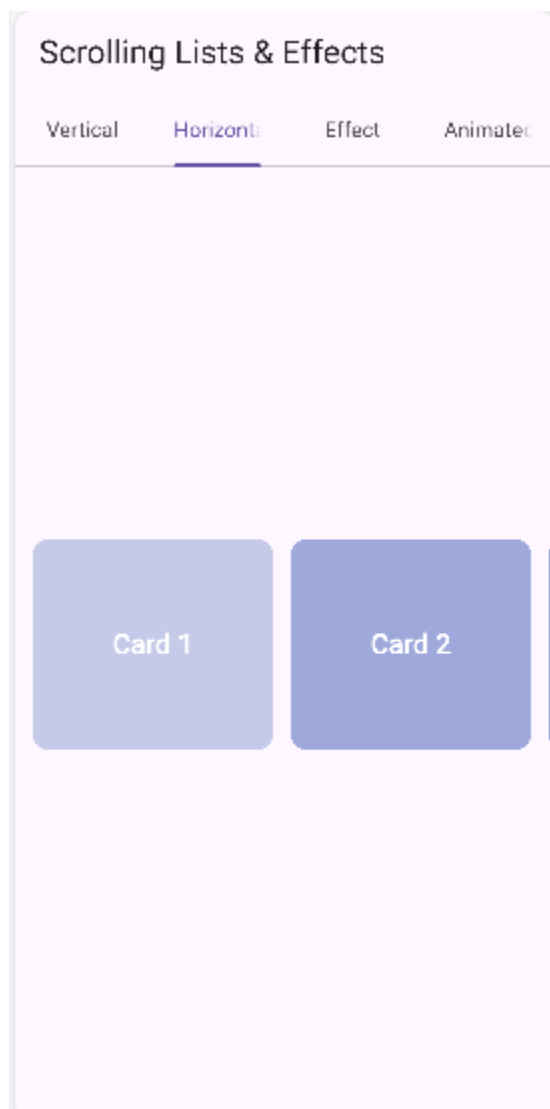
- Use of ListView with `scrollDirection: Axis.horizontal` for sideways scrolling.
- Designing horizontally scrollable cards with Container and BoxDecoration.



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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.



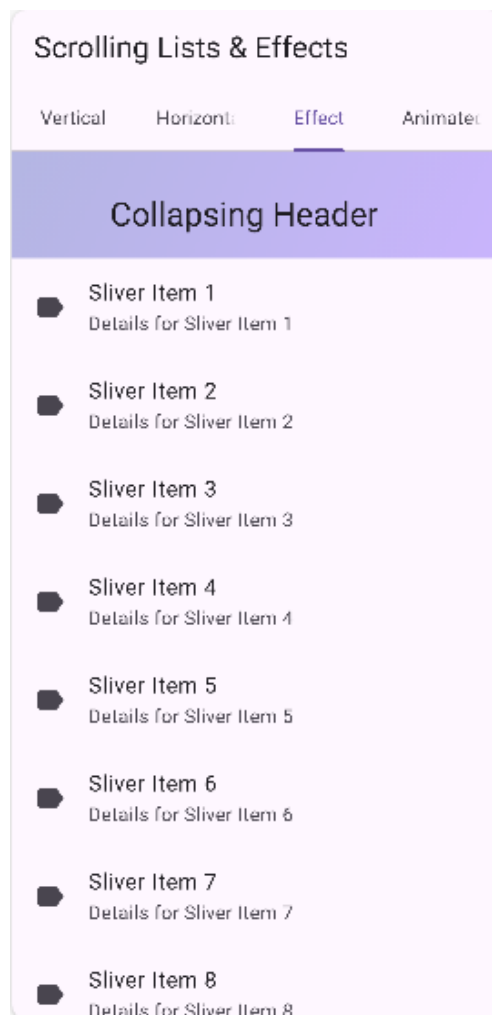
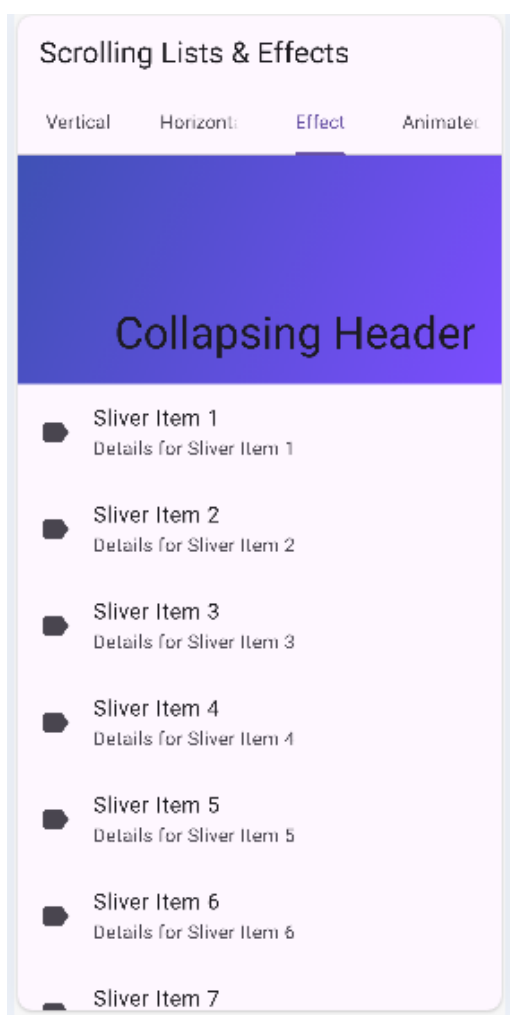


➤ Sliver AppBar Effect

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.





➤ **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.

