MEHRAN UNIVERSITY OF ENGINEERING AND TECHNOLOGY, JAMSHORO

Assignment

Submitted by

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Section: II

Subject: Mobile Application Development

Submitted to: Mam Mariyam

Assessment Type: Complex Engineering Problem (CEP)

Project Title: Easy Count – Cricket Score Counter App

1. Problem Identification

In local and friendly cricket matches, players often face difficulty in keeping proper track of scores, overs, and wickets. Manual scorekeeping on paper is error-prone and does not provide live statistics or an easy way to resume a match later.

Main problems identified:

- Manual scoring is time-consuming and inaccurate.
- No digital record of past matches or statistics.
- Hard to generate summaries for innings or players.
- No simple platform for tracking individual and team performance.

Hence, a mobile application was needed to simplify scoring, store match data safely, and present real-time results and summaries.

2. Proposed Solution

To solve the above problems, we developed a mobile application named **Easy Count** using the **Flutter framework**.
The app allows users to start, record, and manage live cricket matches digitally with a clean and interactive interface.

Key functionalities:

- Start a new match by adding teams, players, and overs.
- Record ball-by-ball updates (runs, wickets, extras).
- View live scoreboard and over summary.
- Save and review previous matches in history.
- View detailed statistics of teams, batsmen, and bowlers.

All data is securely stored **locally** using the **Hive database**, allowing the app to work offline with fast read/write performance.

Main Objectives

- To provide an easy-to-use digital cricket scoring system.
- To manage match data efficiently using Hive for local storage.
- To display innings summaries, player stats, and match history.
- To enable users to resume, delete, and review matches.

- To ensure a simple, offline-capable, and responsive mobile interface.

3. Project Features

For Users

- Start New Match: Add team names, players, overs.
- Live Scoreboard: Record runs, wickets, extras, and track overs.
- Resume Match: Continue a paused or saved game.
- Match History: View previous matches with details.
- Match Summary: Switch between 1st and 2nd innings tabs.
- Player Stats: View batting/bowling performance.

App Information & Support

- **About Us:** Shows developer info and social links.
- **Contact Us:** Displays phone/email with copy-to-clipboard.
- **Terms and Conditions:** Basic usage policies.

Other Highlights

- Simple, modern user interface using Material Design.
- Drawer navigation for quick screen access.
- Search bar for finding players in stats.
- Alert dialogs for confirmation and match setup.
- Blue-grey color theme for clean consistency.

5. Data Storage (Hive Database)

The **Easy Count App** uses the **Hive NoSQL database** for local storage of all data such as match details, player stats, and scores. Hive is a lightweight, high-performance key-value database written in Dart and optimized for Flutter apps.

Why Hive Use:

1. **Offline Functionality:** Works completely offline without internet.
2. **Speed and Performance:** Extremely fast read/write operations for live scoring.
3. **Simplicity:** No complex SQL queries — data is stored as key-value pairs.
4. **Security:** Data can be encrypted locally to protect user information.
5. **Low Memory Usage:** Ideal for mobile devices and Flutter apps.

Data Stored

Box Name	Purpose	Data Fields
matches	Stores each match record	matchID, team1, team2, overs, winner, date
players	Stores batsman & bowler details	name, runs, balls, fours, sixes, wickets
history	Maintains past match summaries	teams, scores, result, timestamp
stats	Stores aggregated team and player performance	teamName, totalRuns, average, strikeRate

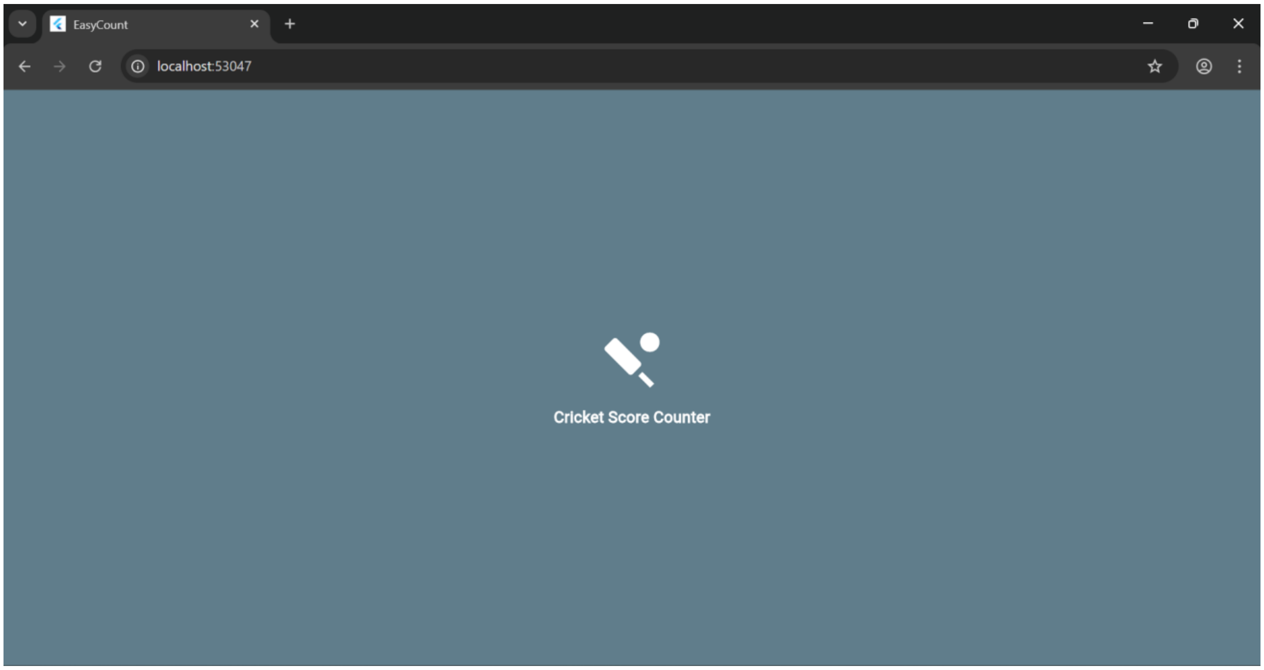
All match data is instantly saved after every update using `Hive.box().put()` and loaded at app start with `Hive.box().get()`, ensuring data persistence even after closing the app.

5. Project Design and Interface

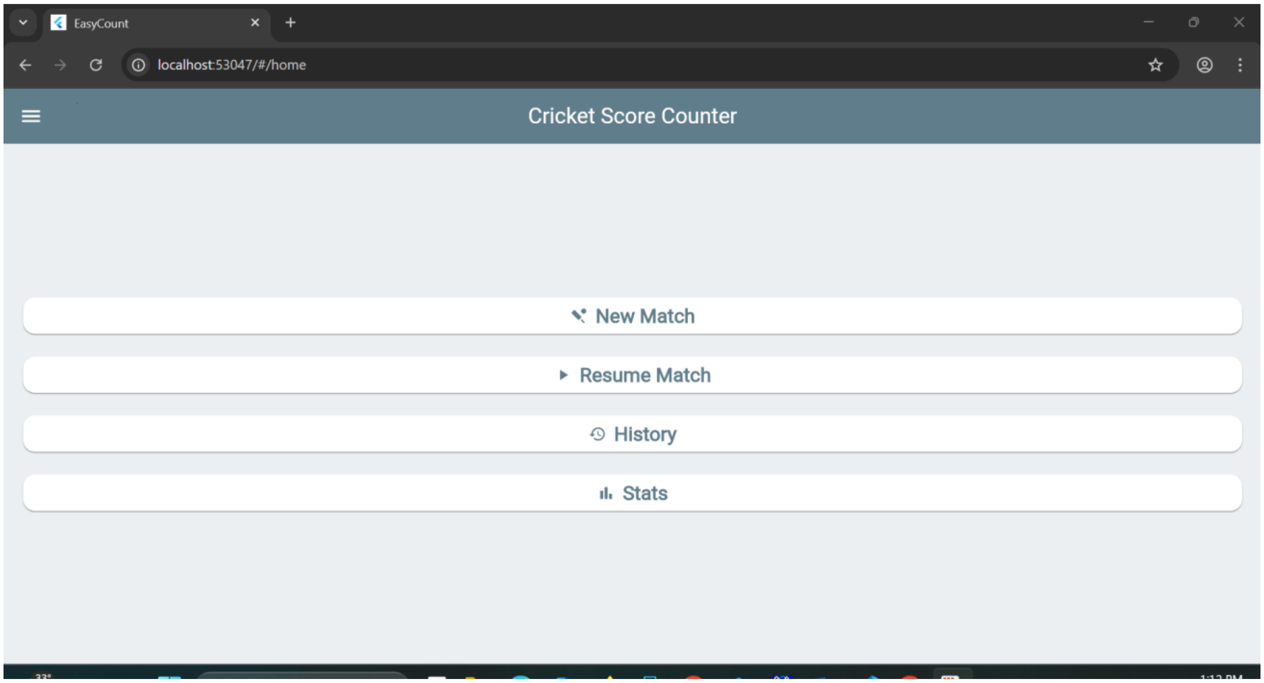
The app's UI is built using Flutter's Material Design widgets for a consistent and responsive layout.

Main Screens:

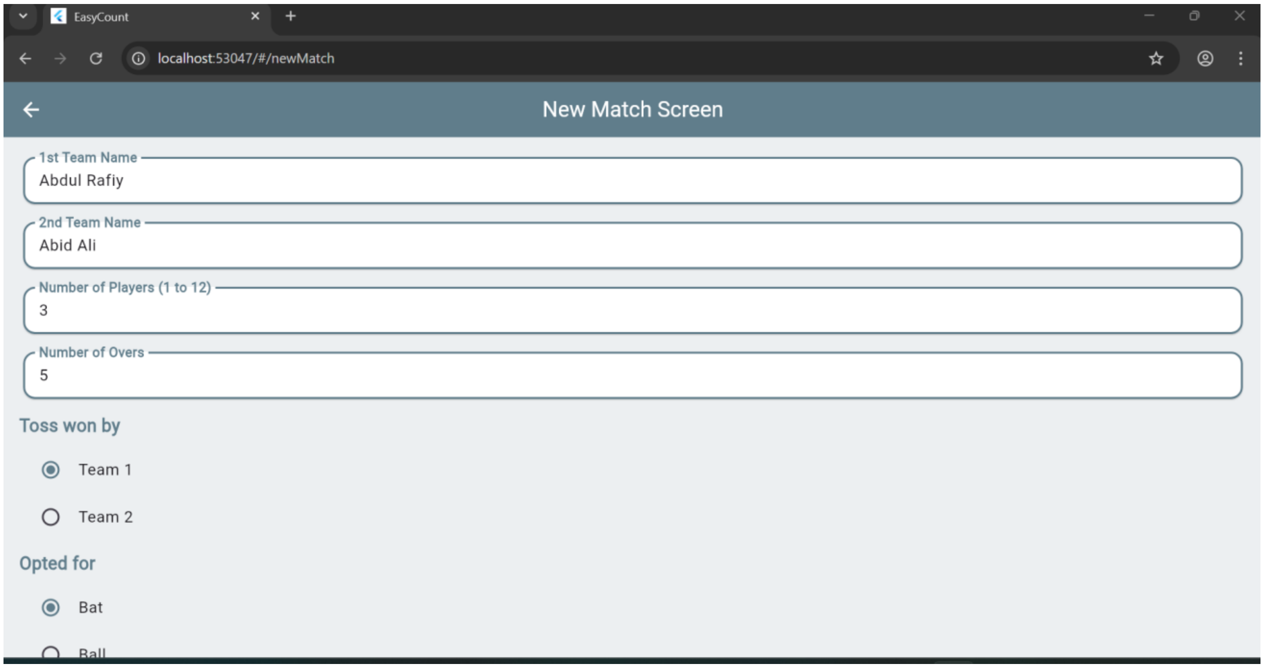
1. **Splash Screen**



2. **Home Screen** – Main dashboard with buttons: New Match, Resume Match, History, Stats.



3. **New Match Screen** – Form for team names, players, and overs.



1st Team Name
Abdul Rafiy

2nd Team Name
Abid Ali

Number of Players (1 to 12)
3

Number of Overs
5

Toss won by

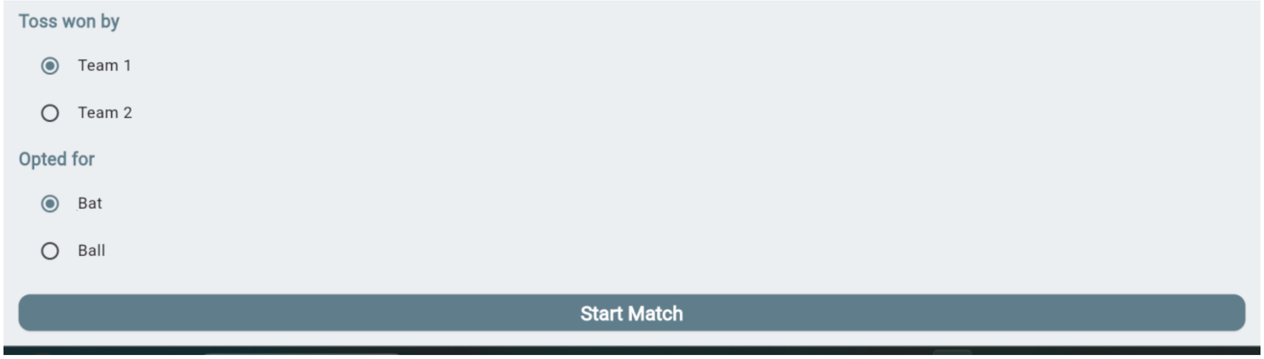
● Team 1

○ Team 2

Opted for

● Bat

○ Ball



Toss won by

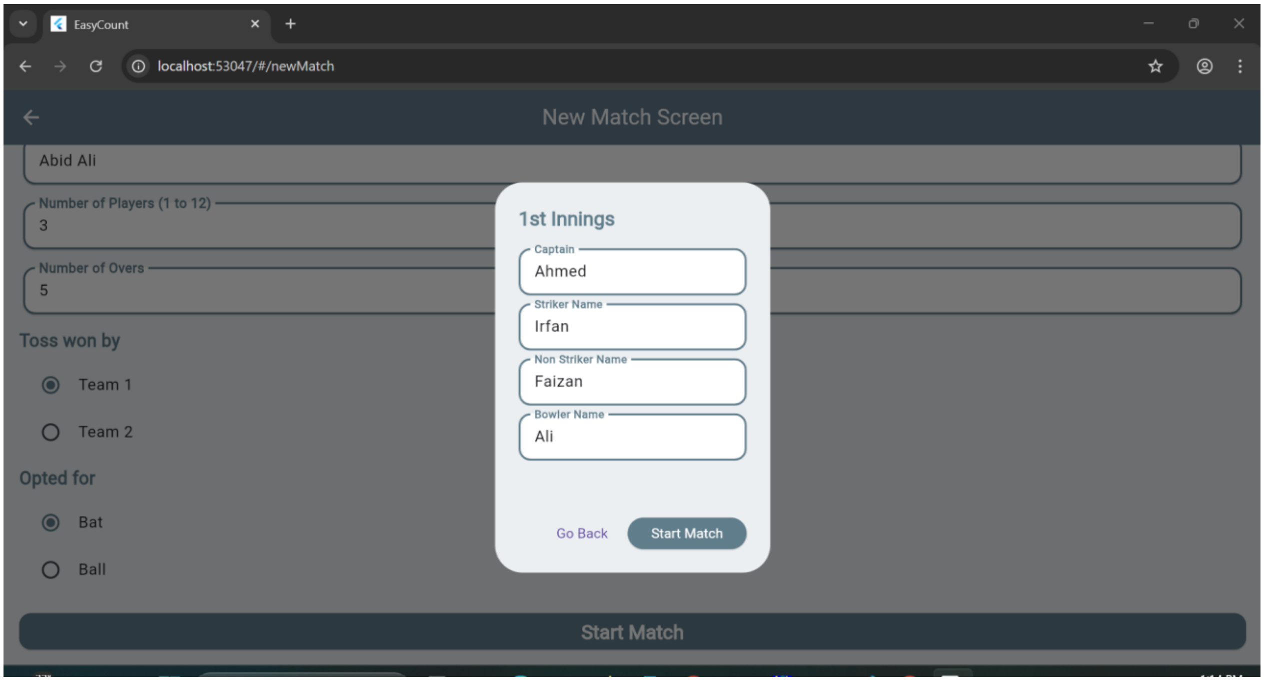
● Team 1

○ Team 2

Opted for

● Bat

○ Ball



Abid Ali

Number of Players (1 to 12): 3

Number of Overs: 5

Toss won by

● Team 1

○ Team 2

Opted for

● Bat

○ Ball

1st Innings

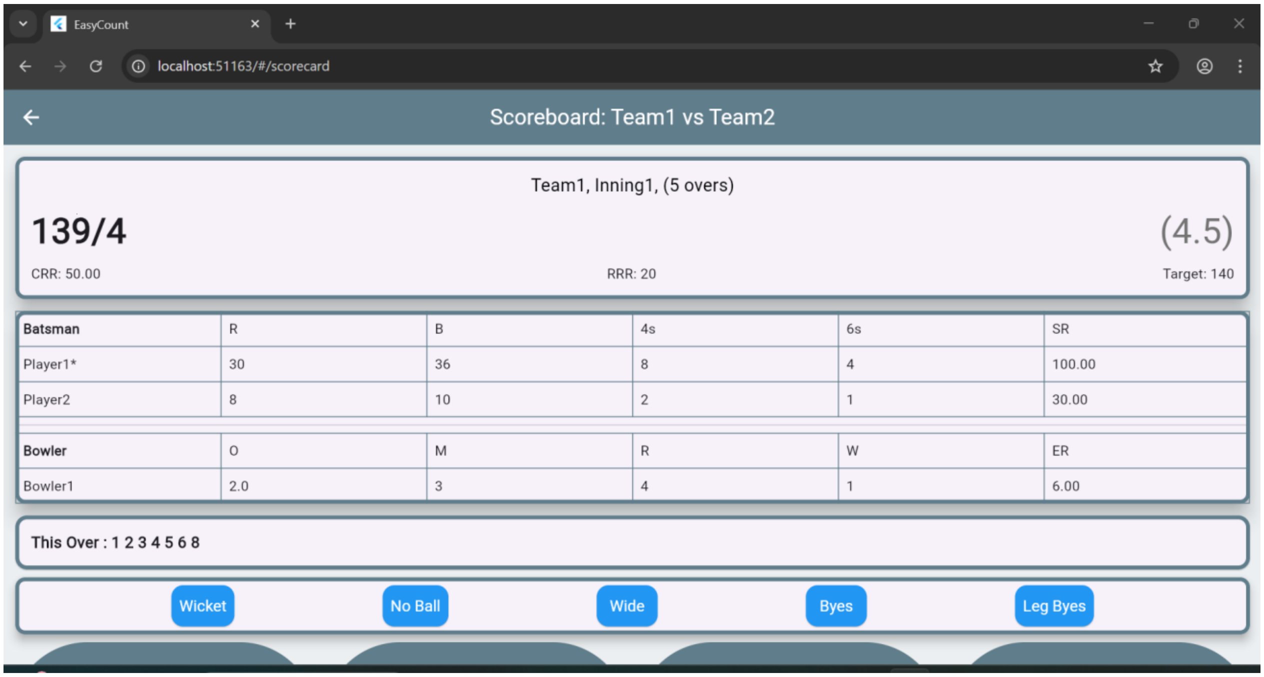
Captain: Ahmed

Striker Name: Irfan

Non Striker Name: Faizan

Bowler Name: Ali

4. **Scoreboard Screen** – Real-time match scoring interface.



Scoreboard: Team1 vs Team2

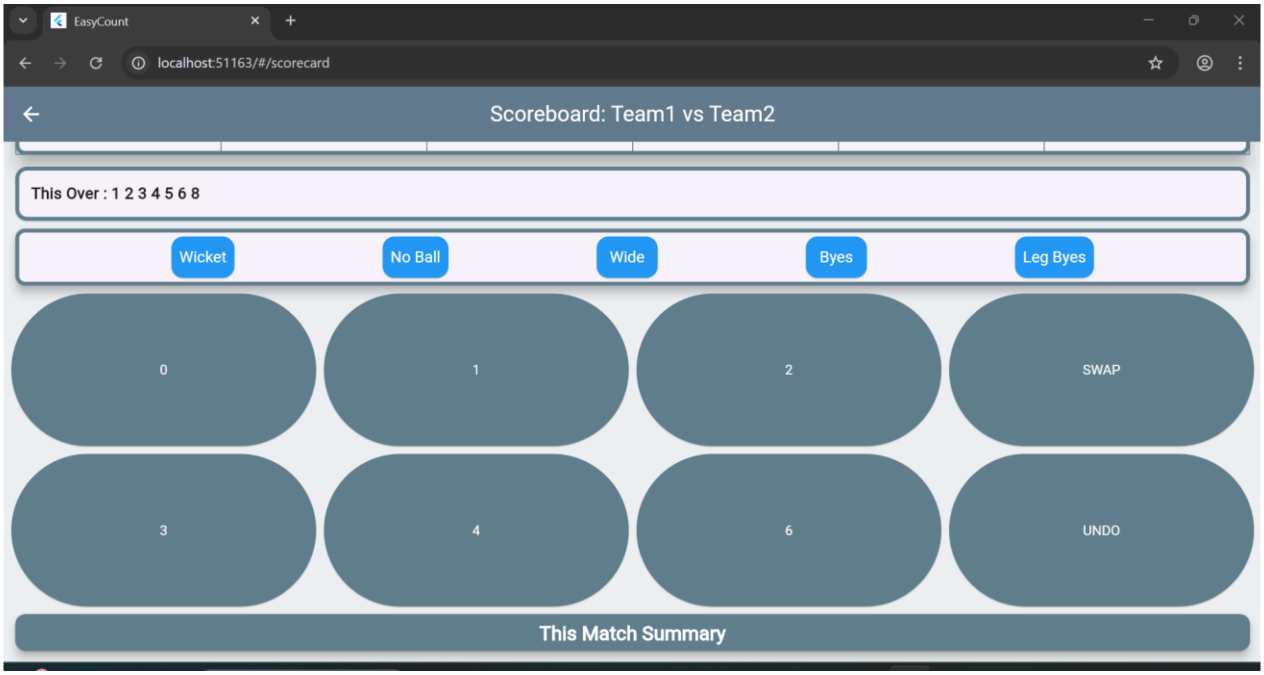
Team1, Inning1, (5 overs)

139/4 (4.5)

CRR: 50.00 RRR: 20 Target: 140

Batsman	R	B	4s	6s	SR
Player1*	30	36	8	4	100.00
Player2	8	10	2	1	30.00
Bowler	O	M	R	W	ER
Bowler1	2.0	3	4	1	6.00

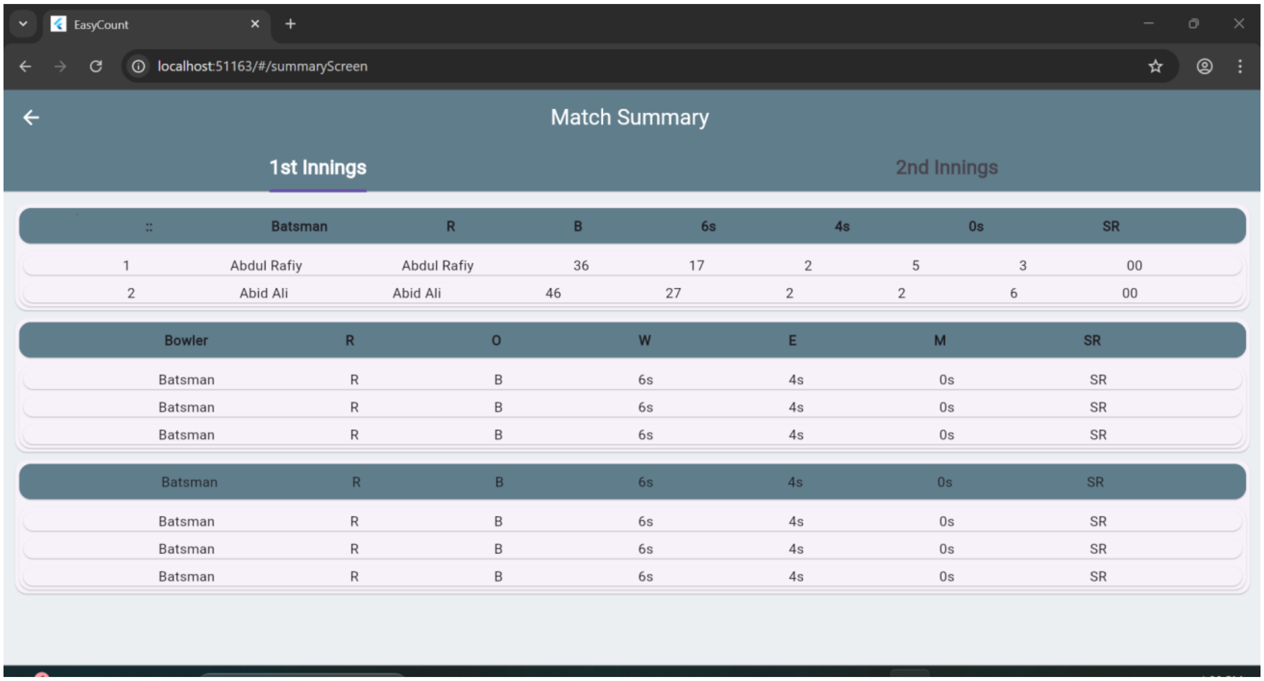
This Over : 1 2 3 4 5 6 8



Scoreboard: Team1 vs Team2

This Over : 1 2 3 4 5 6 8

5. **Summary Screen** – Displays 1st and 2nd innings data in tab view.



::	Batsman	R	B	6s	4s	0s	SR	
1	Abdul Rafiy	Abdul Rafiy	36	17	2	5	3	00
2	Abid Ali	Abid Ali	46	27	2	2	6	00

Bowler	R	O	W	E	M	SR
Batsman	R	B	6s	4s	0s	SR
Batsman	R	B	6s	4s	0s	SR
Batsman	R	B	6s	4s	0s	SR

Batsman	R	B	6s	4s	0s	SR
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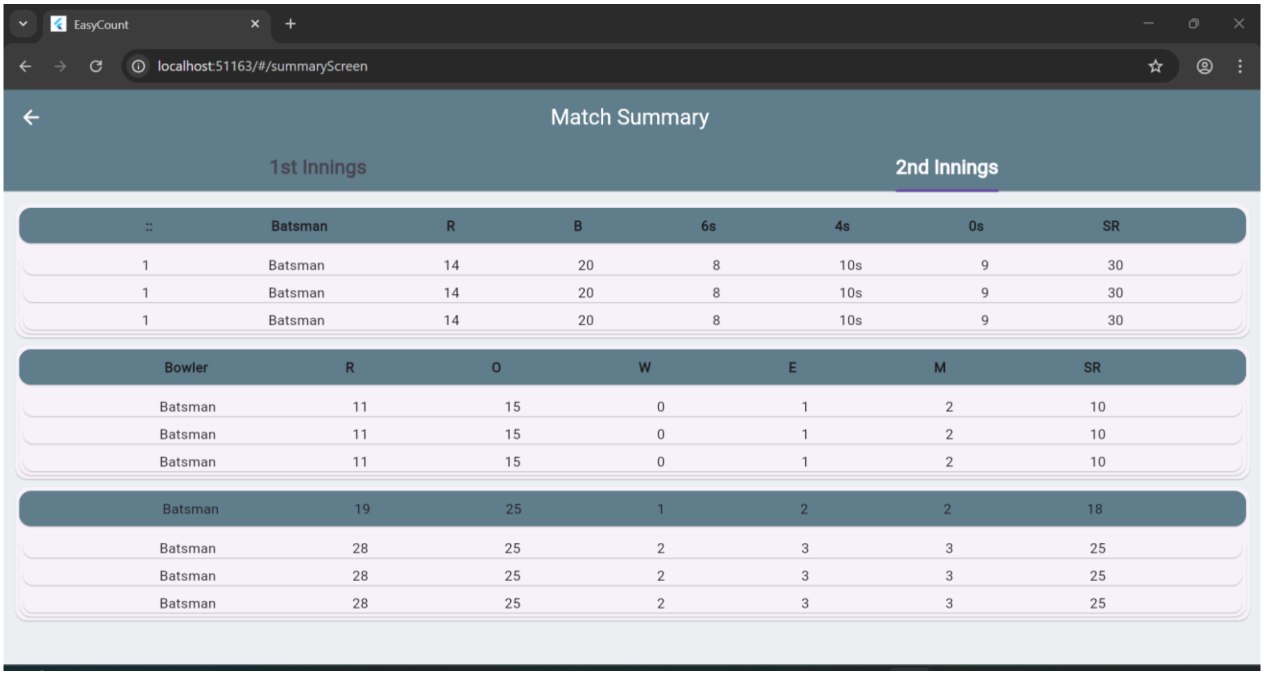
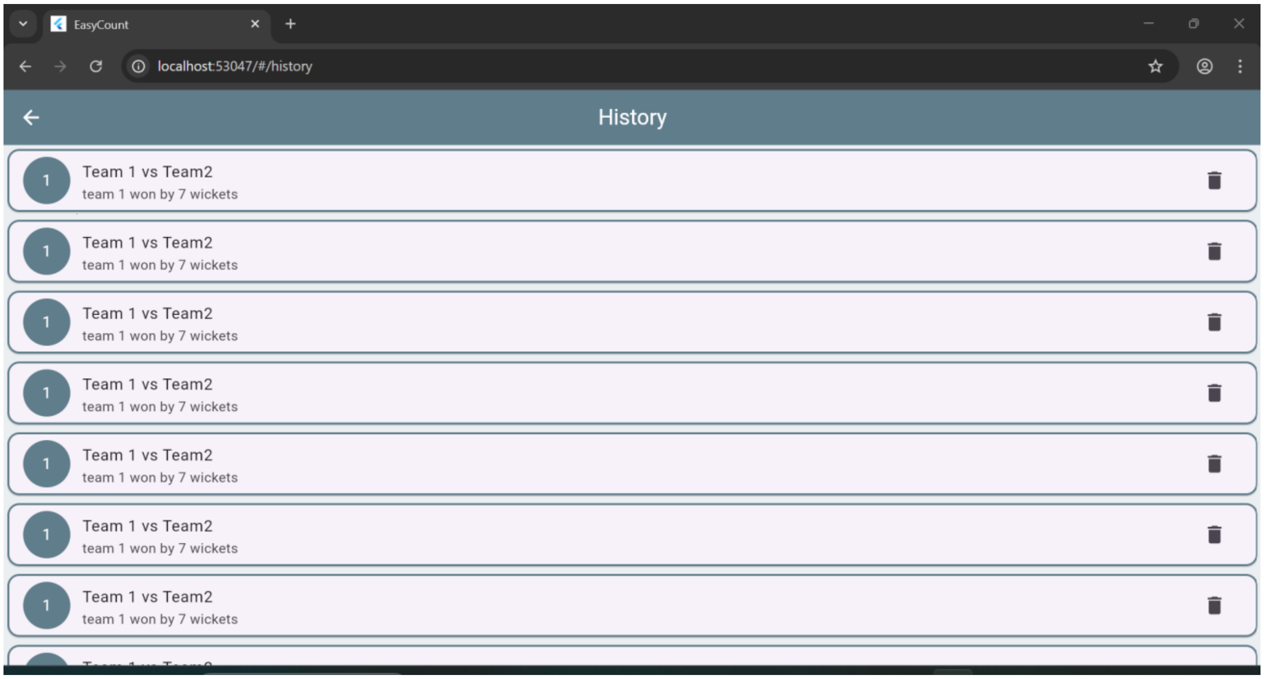


::	Batsman	R	B	6s	4s	0s	SR
1	Batsman	14	20	8	10s	9	30
1	Batsman	14	20	8	10s	9	30
1	Batsman	14	20	8	10s	9	30

Bowler	R	O	W	E	M	SR
Batsman	11	15	0	1	2	10
Batsman	11	15	0	1	2	10
Batsman	11	15	0	1	2	10

Batsman	19	25	1	2	2	18
Batsman	28	25	2	3	3	25
Batsman	28	25	2	3	3	25
Batsman	28	25	2	3	3	25

6. **History Screen** – List of previous matches with delete option.



Team 1 vs Team2
team 1 won by 7 wickets

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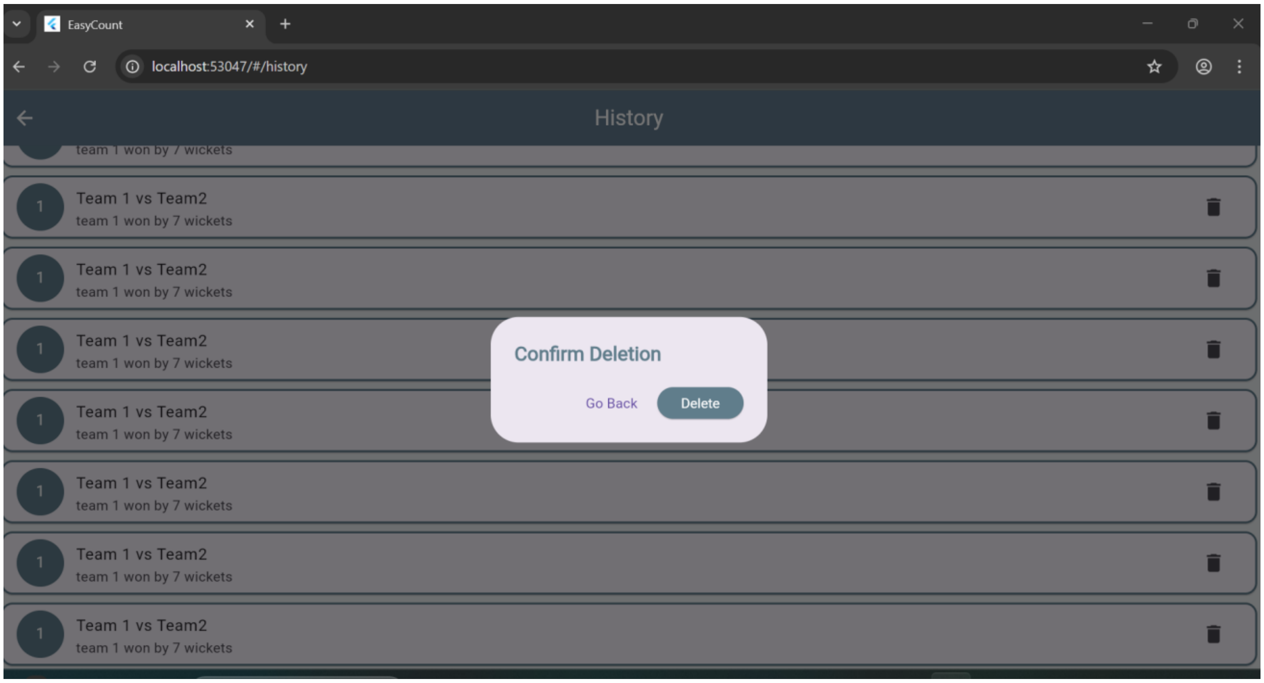

team 1 won by 7 wickets

Team 1 vs Team2
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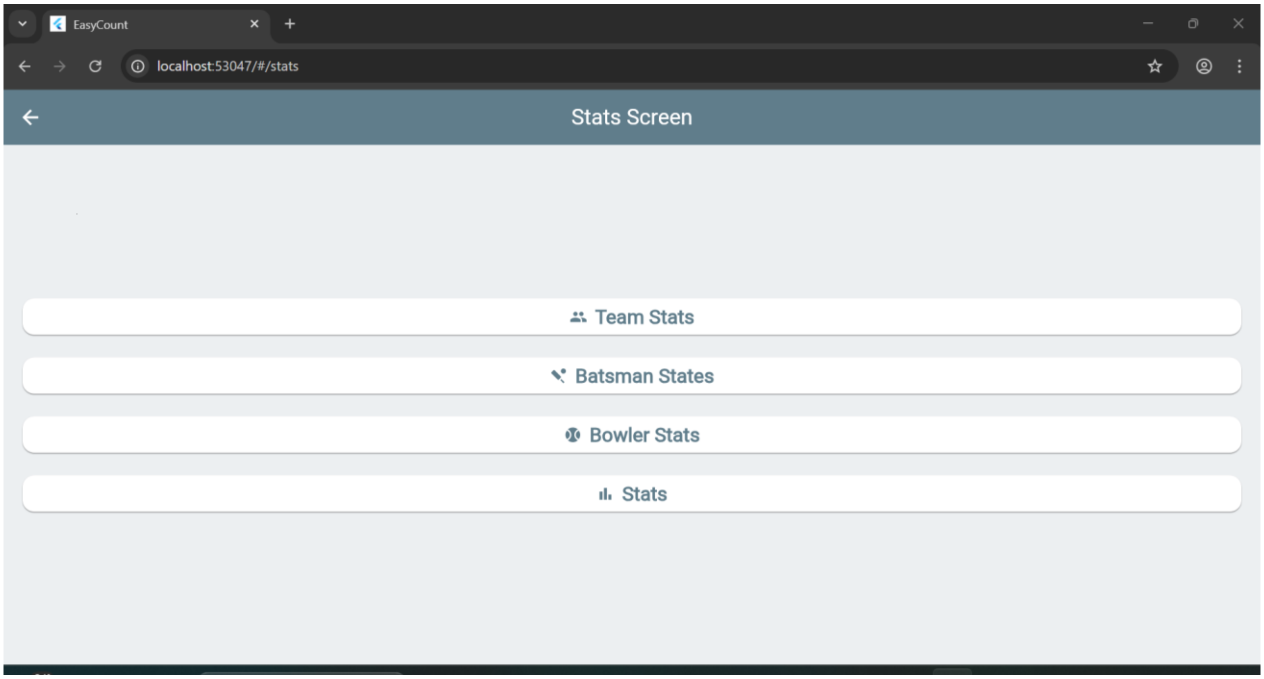
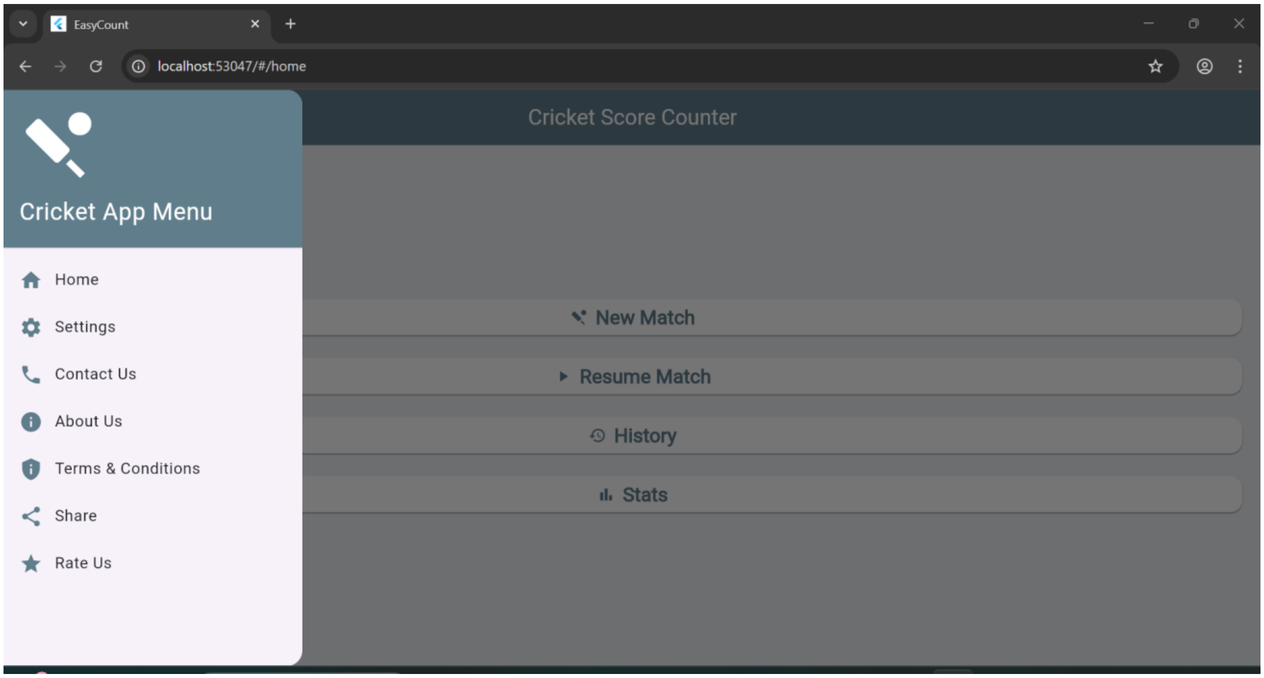
Team 1 vs Team2
team 1 won by 7 wickets

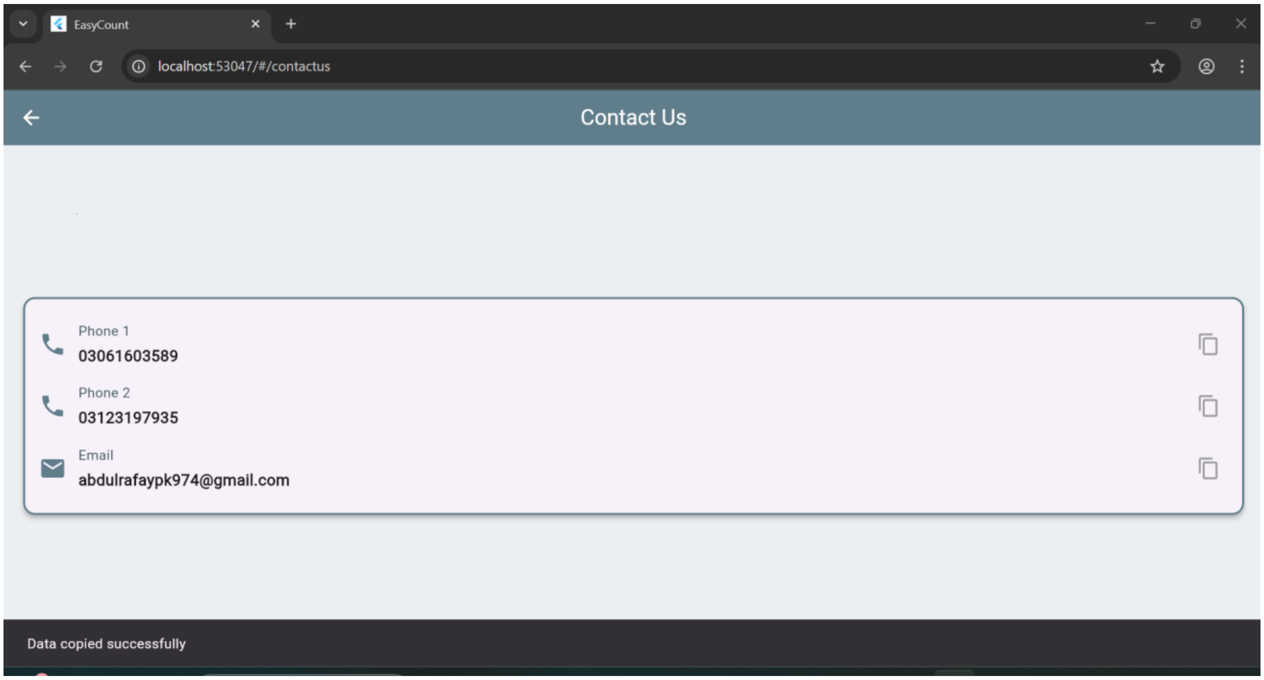
Team 1 vs Team2
team 1 won by 7 wickets

7. **Stats Screen** – Buttons for Team, Batsman, and Bowler stats.



8. **Drawer Screens** – About Us, Contact Us, Terms & Conditions.





Contact Us

Phone 1
03061603589

Phone 2
03123197935

Email
abdulrafaypk974@gmail.com

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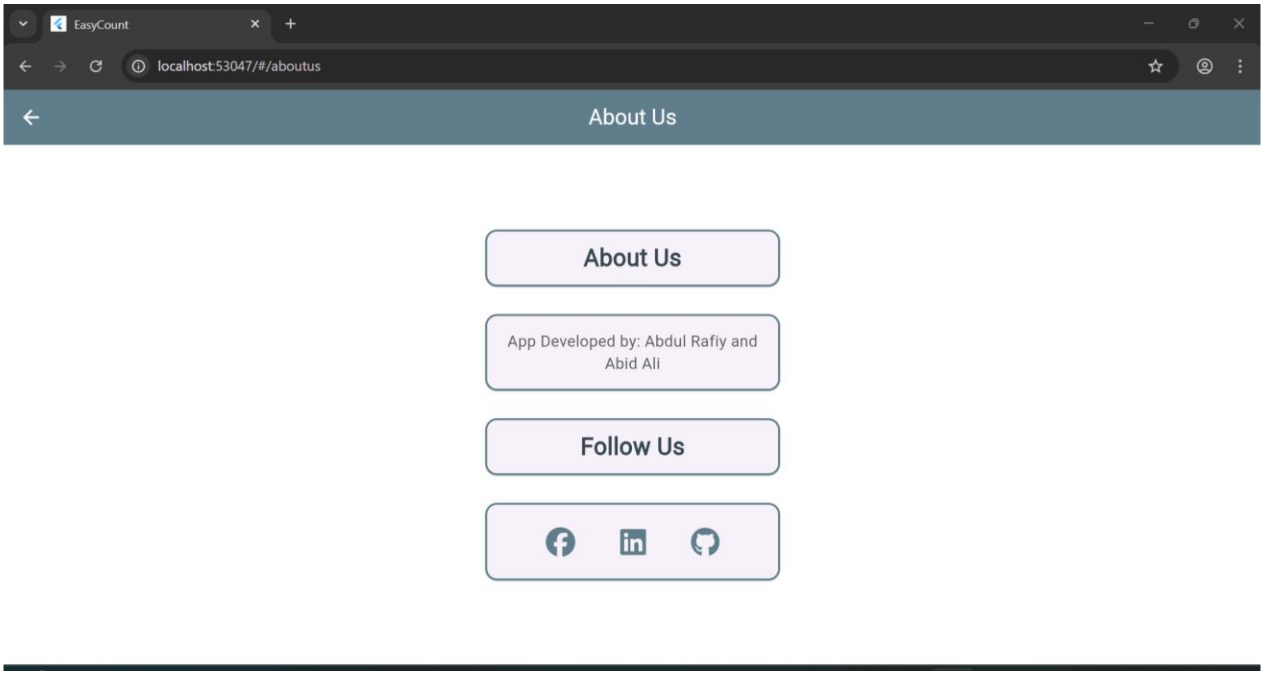
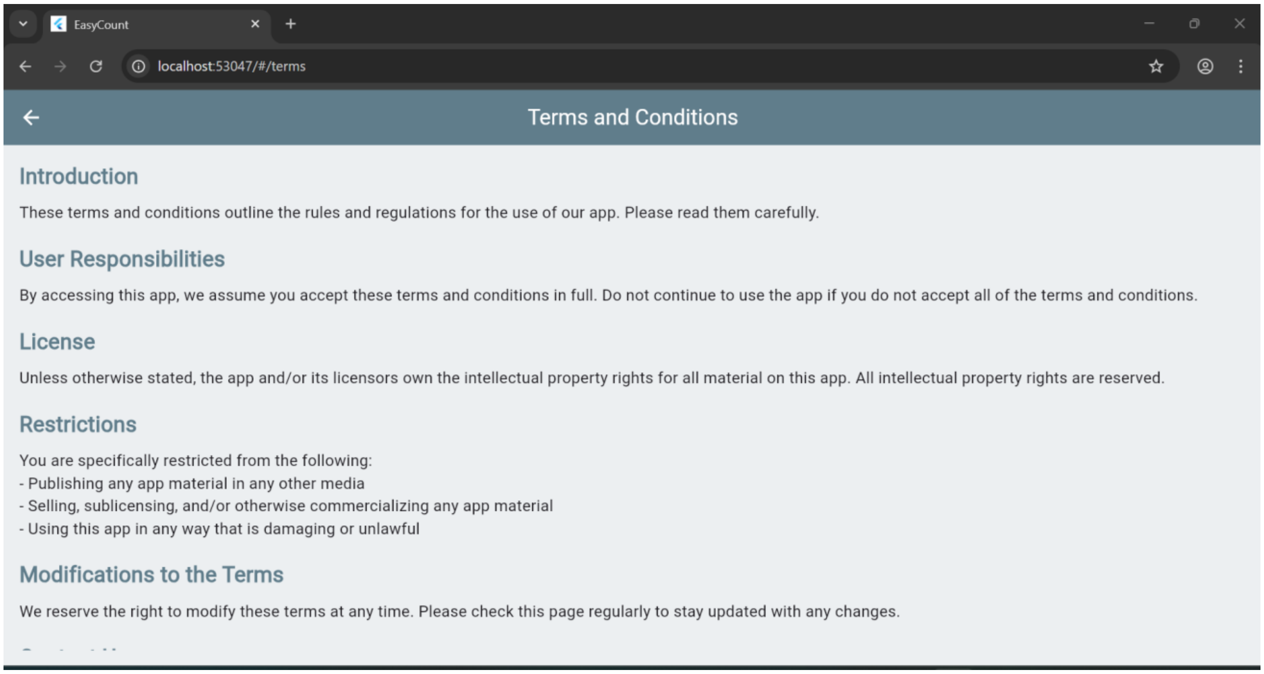


About Us

About Us

App Developed by: Abdul Rafiy and Abid Ali

Follow Us



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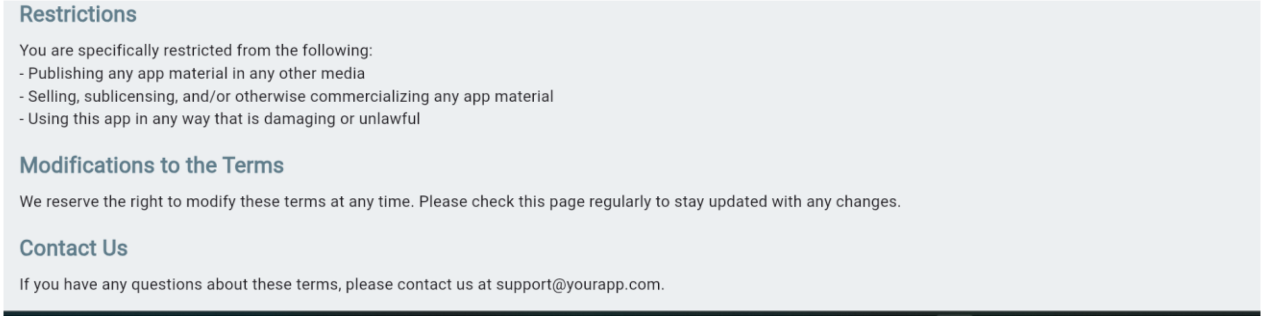

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6. Technologies and Tools Used

Tool / Technology	Purpose
Flutter	Cross-platform app development framework
Dart	Programming language for Flutter
Hive Database	Local NoSQL storage for match data
Android Studio	IDE for designing and testing
font_awesome_flutter	For social media icons
url_launcher	For external social link handling
Material Design Widgets	For consistent UI layout

7. Issues and Bugs Encountered

Issue	Description	Solution
Duplicate State Class Names	All screens used `AppState`	Renamed to unique `_ScreenState`
Data not saving	Hive boxes not opened before use	Initialized Hive in `main()`
UI overflow on small devices	Widgets overflowed	Wrapped with `SingleChildScrollView`
Navigation errors	Incorrect route names	Mapped routes properly in `main.dart`
Search bar issues	TextField rebuild delay	Used `setState()` to refresh results