

WELCOME



ABC

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ALPHABETICA

ABC

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Table of Contents

01	Problem Statement	05	Diagram and Flowchart
02	Features	06	App Preview
03	Technology Used	07	Conclusion & Limitation
04	System Requirements		



01

Problem Statement

Interactive Alphabet Learning

Problem: Limited interactive tools for learning alphabets in different languages.

Solution: Create an app with audio pronunciation, visual feedback, and language-specific modules.

State Persistence for User Preferences

Problem: Loss of last selected state disrupts learning continuity.

Solution: Use SharedPreferences to save and restore user preferences.

Multi-Language Alphabet Accessibility

Problem: Limited resources for learning Bengali, Arabic, and English alphabets with correct pronunciation.

Solution: Create language-specific modules with audio for accurate pronunciation and structured content.



02

Feature

Bengali Learning Modules	English Learning Modules	Arabic Learning Modules	Interactive Mathematics Game
<ul style="list-style-type: none">• Bengali vowels (স্বরবর্ণ)• Bengali consonants (ব্যঞ্জনবর্ণ)• Bengali numbers (১-১০)	<ul style="list-style-type: none">• English alphabet (A-Z)• English numerical (1-10)	<ul style="list-style-type: none">• Arabic alphabet (أ - ي)• Arabic numerical (1-10)	Engaging math exercises for users to enhance problem-solving skills.



03

Technology Used

Operating System	Ubuntu 24.04
Hardware	16 GB RAM, Intel Core i7 (7th Gen)
Programming Language	Java (Version 20 with JDK 20)
IDE	Android Studio
Database	SQLite
Libraries	MediaPlayer: For interactive audio playback- CountDownTimer: For math game timer- SharedPreferences: To store and manage user data locally



04

System Requirements

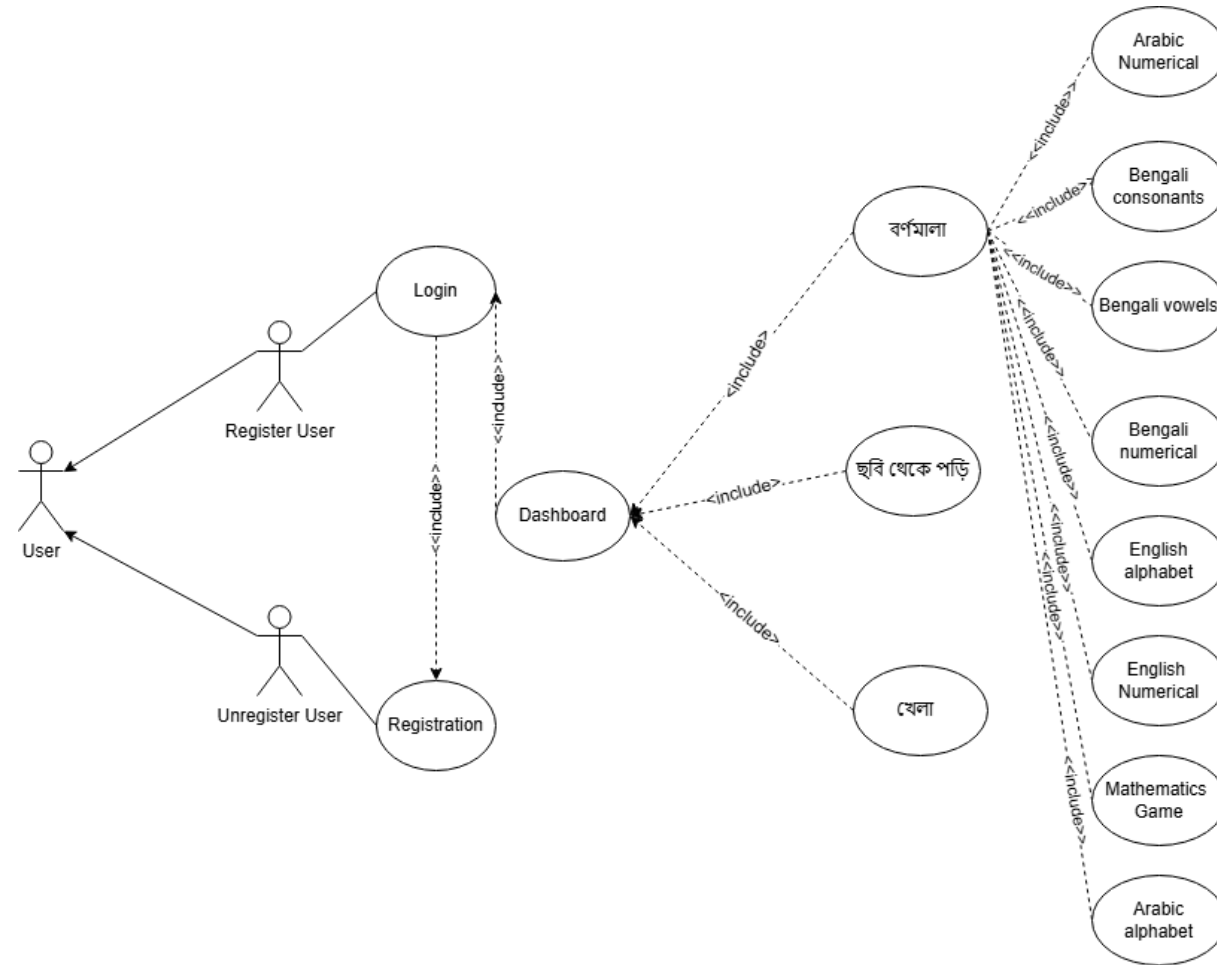
Device	Android smartphone or tablet
Processor	Minimum 1 GHz
RAM	2 GB or higher
Storage	150 MB or higher
Operating System	Android 5.0 (Lollipop) or later



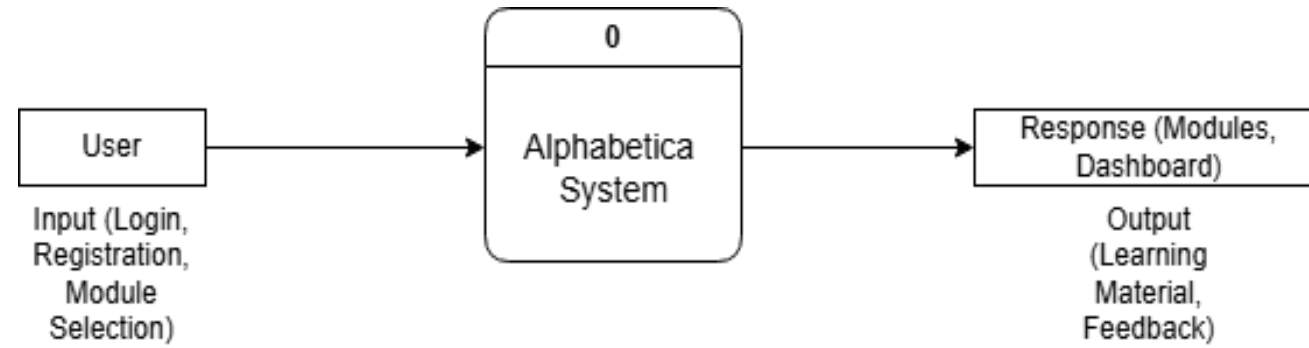
05

Diagram and Flowchart

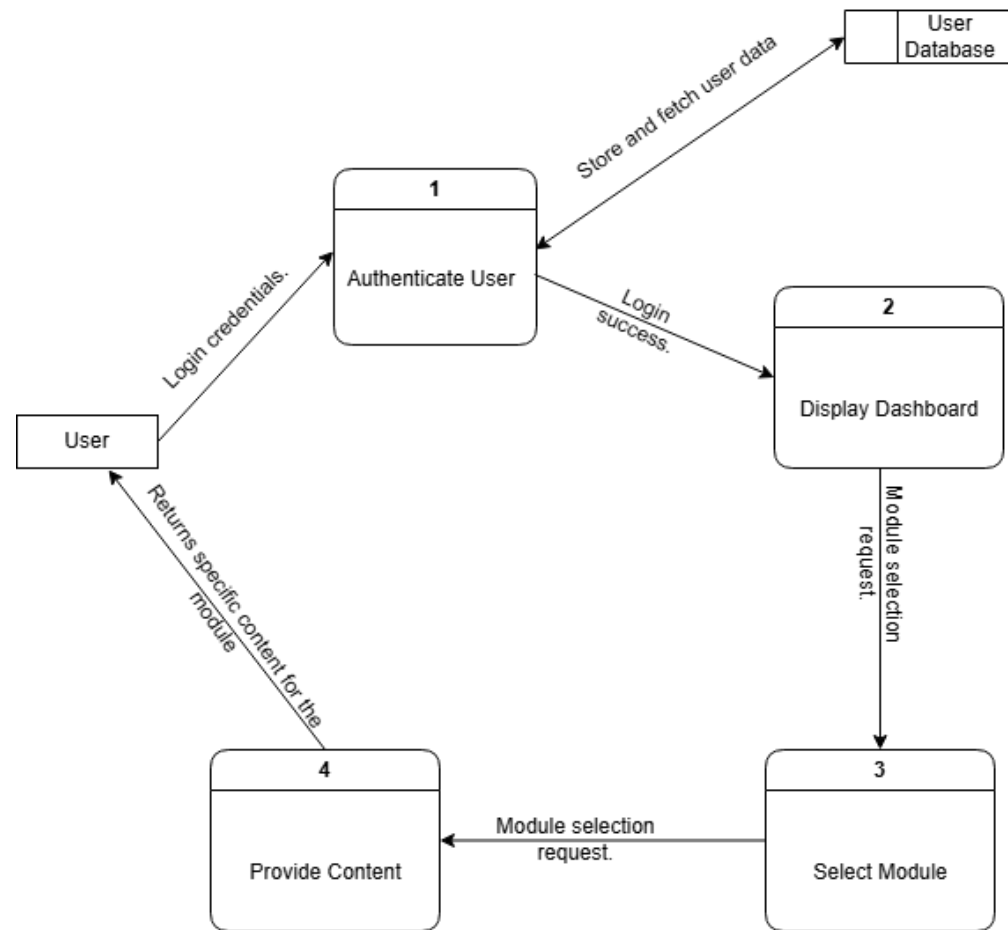
Use Case Diagram



LEVEL 0 DFD



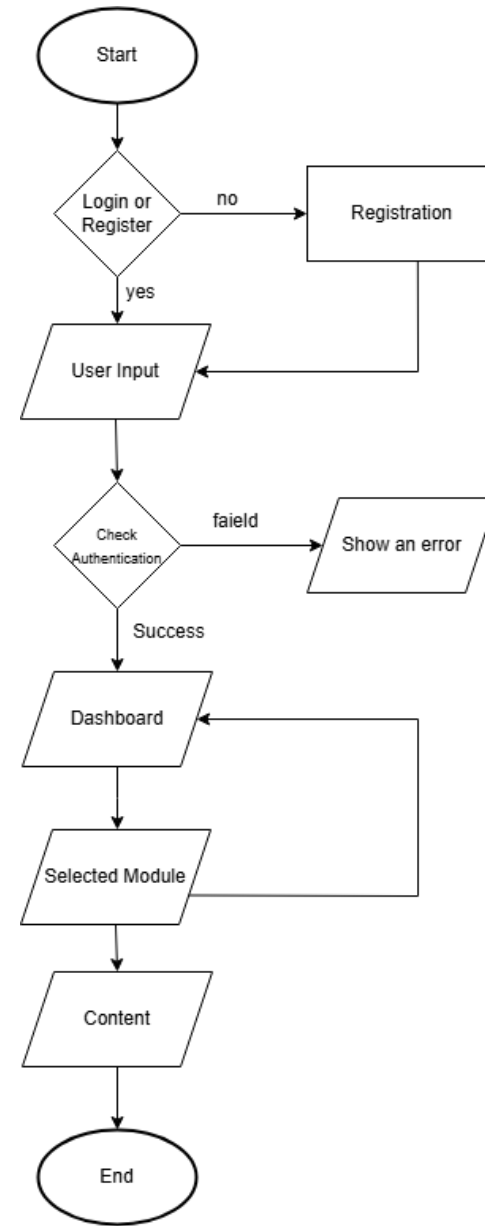
LEVEL 1 DFD



User Table

Column Name	Data Type	Constraints	Description
fullname	TEXT	NOT NULL	Stores the user's full name.
Email	TEXT	NOT NULL	Stores the user's email.
username	TEXT	UNIQUE, NOT NULL	Stores the user's unique username.
password	TEXT	NOT NULL	Stores the user's password.

Flowchart

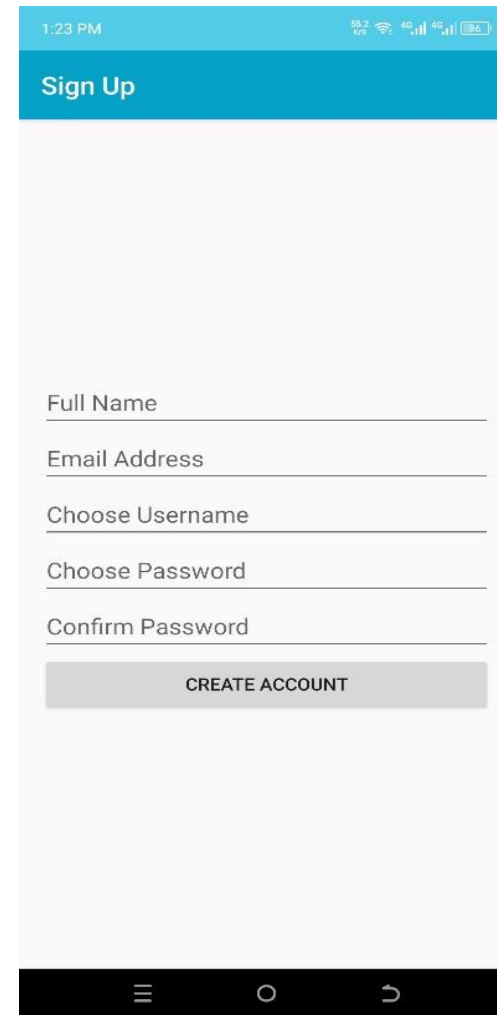




06

App Preview

User Registration

A mobile application interface for user registration. The screen has a light gray background. At the top, there is a blue header bar with the text "Sign Up" in white. Below the header, there are five text input fields, each with a label above it: "Full Name", "Email Address", "Choose Username", "Choose Password", and "Confirm Password". The labels are in a dark gray font. Below the input fields, there is a gray button with the text "CREATE ACCOUNT" in black. At the very bottom of the screen, there is a black navigation bar with three white icons: a hamburger menu, a circle, and a right-pointing arrow. The status bar at the top of the phone shows the time "1:23 PM" and various system icons like battery, signal, and Wi-Fi.

1:23 PM

Sign Up

Full Name

Email Address

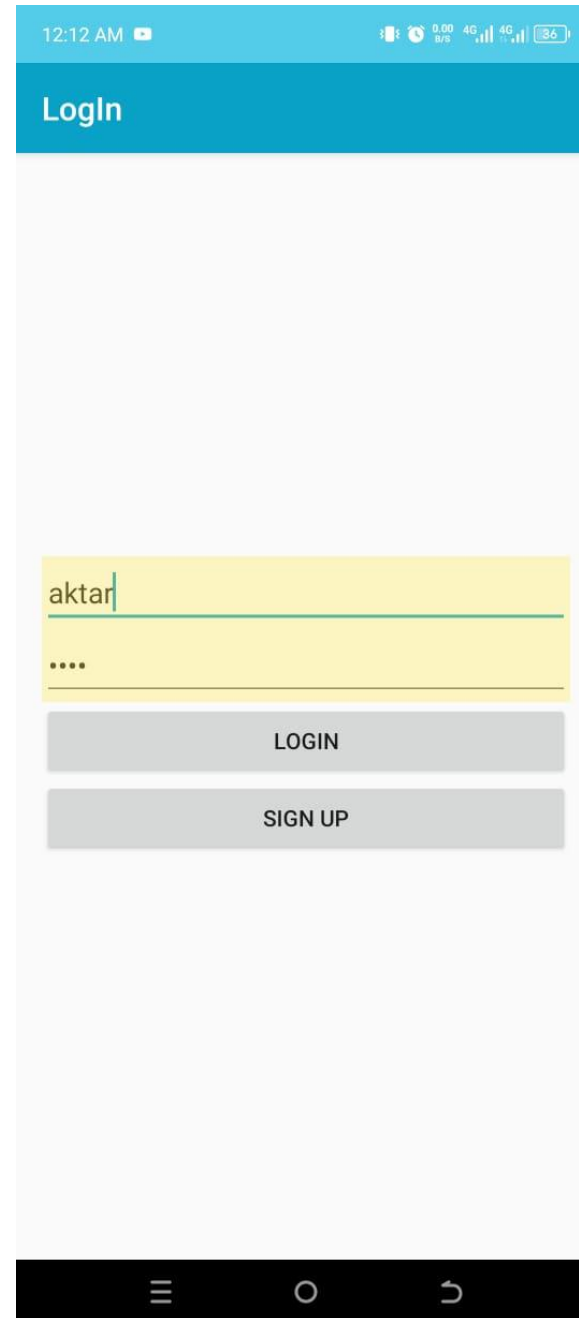
Choose Username

Choose Password

Confirm Password

CREATE ACCOUNT

User Login



A mobile application login screen. At the top is a blue header with the text "Login". Below the header is a large, light gray rectangular area. In the center of this area is a yellow login form. The form has two input fields: the top one contains the text "aktar" and the bottom one contains four dots "....". Below the input fields are two gray buttons: "LOGIN" and "SIGN UP". At the very bottom of the screen is a black navigation bar with three white icons: a hamburger menu, a circle, and a right-pointing arrow.

12:12 AM

86

Login

aktar

....

LOGIN

SIGN UP

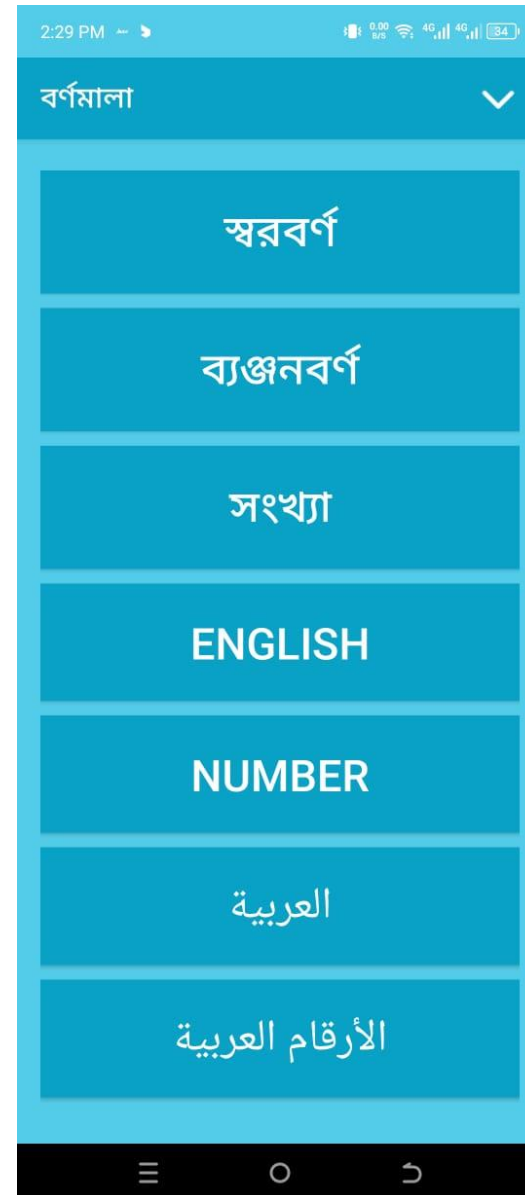
Profile



Dashboard



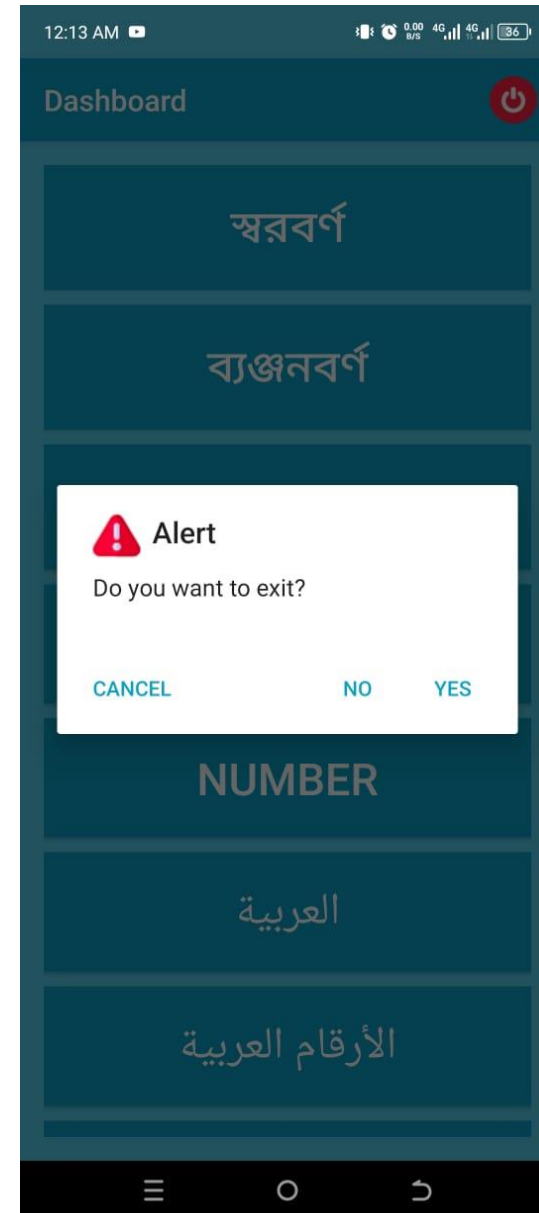
বর্ণমালা Dashboard



ব্যঞ্জনবর্ণ Module



Alert Dialogue Box For Closing App



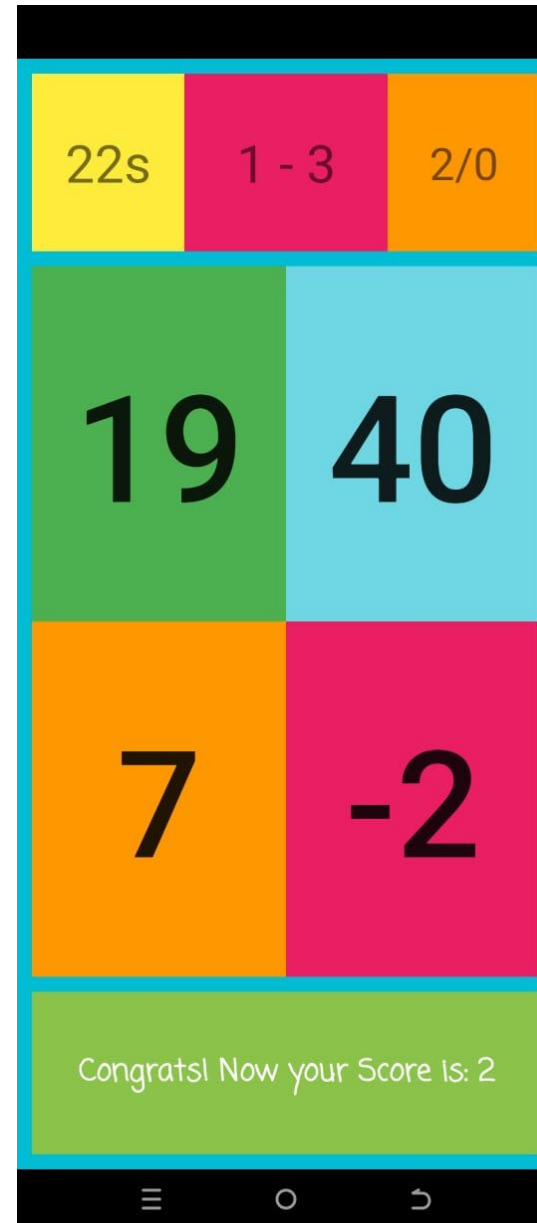
After closing back
to ব্যঞ্জনবর্ণ Module



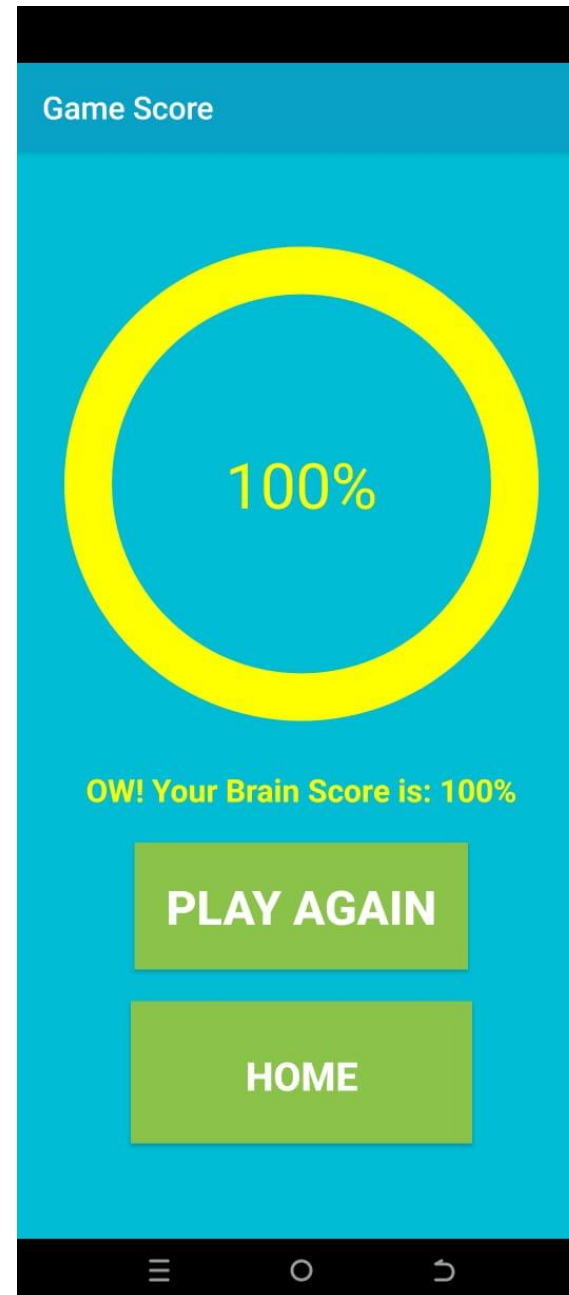
ছবি থেকে পড়ি স্বরবর্ণ Module



Game Module



Game Score





07

Conclusion & Limitation

Conclusion

- **Interactive Learning:** The app provides an engaging platform to learn Bengali, English, and Arabic alphabets and numbers.
- **Tailored Content:** Includes audio pronunciations, visual feedback, and structured language modules.
- **State Persistence:** SharedPreferences ensure seamless user experience by saving the last state.

Limitation

- Language Support: Currently supports only Bengali, English, and Arabic.
- Audio Quality: Limited to pre-recorded pronunciations, which may not cover all accents.
- Platform Dependency: Only available on Android, not on iOS or web platforms.

Thanks!

Do you have any questions?

