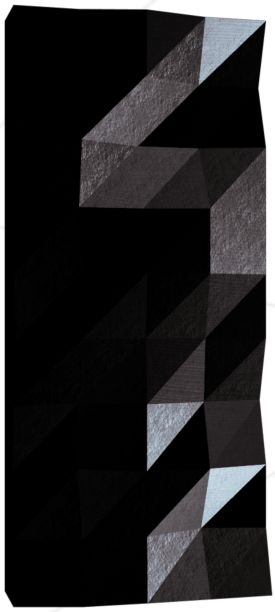


Peace Break

Mobile development

Summary: Peace Break is a mobile game project inspired by "Brick Breaker", focusing on core mobile development concepts like authentication and database management.

Version: 2.0

Contents

Chapter I

Instructions

- This page is the only official reference. Don't trust rumors.
- Read the entire document carefully before getting started.
- This project will be evaluated by your peers.
- Trust the document, don't blindly follow demos or example images, as they may include non-mandatory extras.
- Have a question? Ask the peer to your right. If they're unavailable, try the one on your left.
- By Odin, by Thor! Use your brain!

Chapter II

Introduction

Welcome!

Welcome to this Mobile application project!
You're about to build a mobile game inspired by the classic "Brick Breaker".

This project will guide you through essential mobile development skills: creating intuitive user interfaces, implementing game logic, managing user data, and integrating authentication systems.

By completing this project, you'll gain the ability to turn an idea into a functional mobile application, preparing you for real-world development tasks.

We look forward to seeing what you create. Good luck and happy coding!

Chapter III

General Instructions

Peace Break is a multi-stage brick breaker game. Players must be authenticated to access gameplay. Each stage involves controlling a paddle to bounce a ball and break bricks. Players lose lives if the ball falls off the screen; losing all lives ends the stage. A stage is cleared when all bricks are destroyed.

Your application must include:

- A scoring and coin system.
- A shop to purchase items using coins.
- A system to replay completed stages.
- A settings menu for game preferences.
- A leaderboard displaying the top 10 players.
- Authentication and a database for user data.

You may choose any programming language, framework, or game engine.

Note: All images in this document are from an example project built with C#, Unity, and Firebase.

`Your application must include at least 20 pre-registered user accounts with varying progress. Be ready to provide credentials and perform manual database updates during evaluation.`

`Reference images are illustrative. The final application must meet all functional and technical requirements described.`

Chapter IV

Mandatory part

IV.1 Overview

The following features are required:

- User authentication system.
- Login and registration pages.
- Main menu with player stats.
- Shop interface.
- Page for completed stages.
- Leaderboard (Top 10 players).
- Inventory page.
- Settings page.
- A minimum of 10 playable stages.

- `Your application must never crash or freeze.`
- `All systems must be secure (e.g., hashed passwords, SQL injection prevention).`

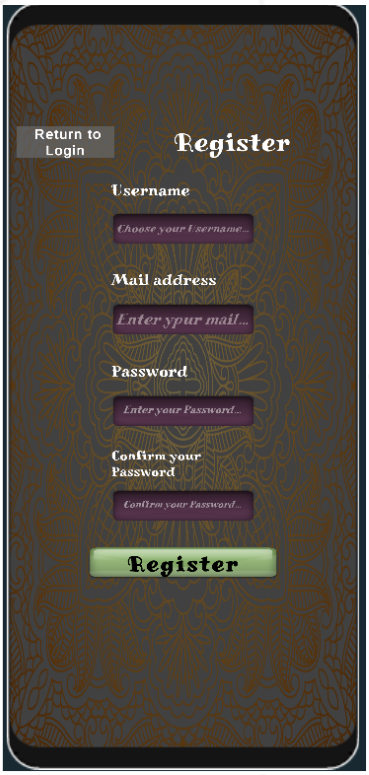
IV.2 Authentication

Registration:

- Collect email, username, password, and confirmation.
- Email must be valid and unique.
- Username: 3–10 alphanumeric characters, unique.
- Password: minimum 8 characters, includes uppercase, lowercase, number, special character.
- Store passwords hashed in the database.
- Handle and display validation errors.
- Redirect users to log in after successful registration.

login:

- Allow login via username or email + password.
- Handle and display incorrect credentials.



IV.3 Main Menu

After logging in, players are redirected to the main menu. It must include:

- Player name, total score, and available coins.
- Access to next playable stage.
- Access to the shop, inventory, completed stages, and settings.

IV.4 Stages

The game must contain at least 10 unique stages.

Gameplay Mechanics

- One paddle, one ball, and a wall of bricks.
- Player starts with 3 lives.
- Paddle moves via touch input.
- Ball destroys bricks on contact (some require multiple hits).
- Player loses a life if the ball falls off the screen.
- Losing all lives ends the stage.
- Power-ups and power-downs must be included.

IV.4.1 Information bar

- The information bar must display at least the following details during the game, updated in real time:
  - Stage name/number.
  - Number of remaining lives.
  - Stage score.
  - Coins earned in the stage.

Bricks

- Bricks are arranged at the top of the screen.
- Some bricks require multiple hits to break.
- Their durability must be visually represented (e.g., color, size).
- Destroying bricks grants score and coins.
- You may assign different values for different brick types.

Power-ups and Power-downs

- Players can collect power-ups and power-downs during the game.
- Mandatory examples:
  - Power-up: Extra life (for current stage only).
  - Power-up: Increase paddle size temporarily.
  - Power-down: Decrease paddle size temporarily.
  - Power-down: Increase ball speed temporarily.
- You are free to implement other creative effects.

Stage Progression

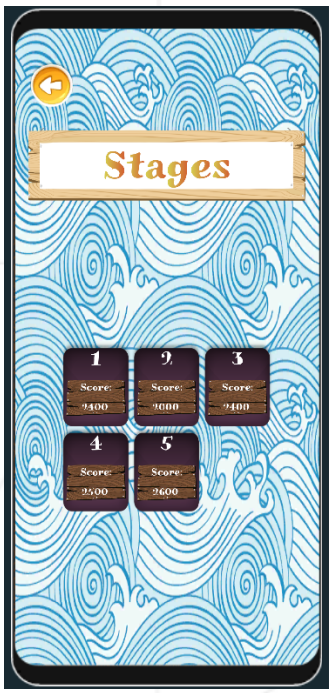
- Stages increase in difficulty.
- Players can pause, resume, or exit a stage.
- An information bar must display the current stage's name/number, score, and coins (updated in real time).
- Win: Show summary (score/coins), offer next stage or return.
- Lose: Option to retry or return to main menu.

Score and Coins

- Score and coins earned per brick.
- Final score added only if the stage is won.
- Real-time display during gameplay.

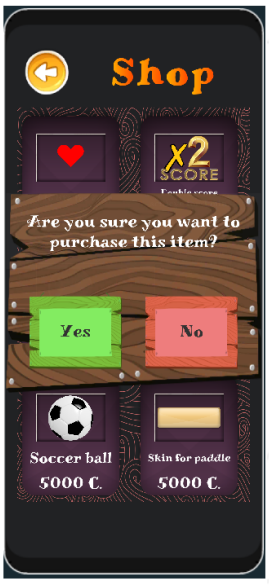
IV.5 Completed Stages

- Players can see and replay completed stages.
- Replay win: show old/new score, and keep the best one.
- Replay lose: previous score unchanged.
- Redirect to main menu or completed stages page.



IV.6 Shop

- Display player's coin balance.
- Show items with price and description.
- Confirmation popup before purchase.
- Deduct coins after purchase.
- Shop must include:
  - Life+: permanently increases max lives.
  - Paddle skins (at least 2).
  - Ball skins (at least 2).
- Skins appear only if not owned.
- Purchased skins go to inventory. Life+ is applied instantly.



IV.7 Inventory

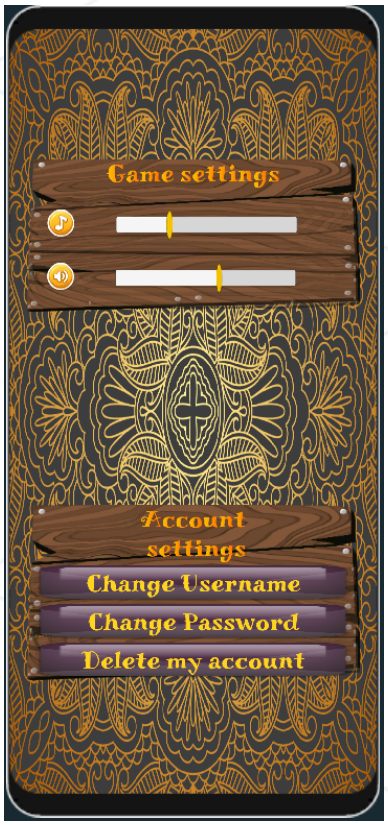
- Display all purchased items (except Life+).
- Allow applying/removing paddle or ball skins.
- Indicate which skin is currently applied.

IV.8 Leaderboard

- Show Top 10 players with rank, username, and score.
- Display the current player's rank.
- Update leaderboard on page load.

IV.9 Settings

- Include the following options:
  - Delete game progress.
  - Delete account.
  - Change password.
  - Change username.
- Show confirmation before any action.
- Redirect to login page after changes.



Chapter V

Bonus part

You can implement all bonuses, but only 5 will be evaluated:

- **Graphics:** Add accessibility support (e.g., Tritanopia, Protanopia).
- **Sound:** Add music and sound effects.
- **Extra Powers:** Include at least 3 additional power-ups/power-downs.
- **Tutorial:** Interactive guide for new players.
- **Advanced Save:** Pause and resume stages across sessions.
- **Persistent Login:** Keep players logged in after closing the app.

Bonuses are only considered if the mandatory part is complete and validated.

Chapter VI

Submission and peer-evaluation

bmit your assignment in your `Git` repository as usual. Only the content within your repository will be evaluated during the defense. Be sure to double-check the names of your folders and files to ensure they are correct.

For this project, you must build your application in the presence of the evaluators. You will need to demonstrate your application and be ready to answer questions about your implementation choices.

Your build must include a file that can be run on a mobile device or emulator.

Make sure there are no credentials in your repository! If any credentials are found, your project will be considered a failure.

The evaluation will be conducted on the computer of the group being evaluated.