# 1. Introduction

## 1.1 Purpose

This document was created by:

* Ashish Ghaskata
* Krishna Raj Bhandari
* Suraj Bhatta
* Mohammad Adnan Khan

It defines the test plan and protocol used to validate all functional and non-functional requirements of the **FunFlip Educational Game**.

**Audience**: Quality assurance team, developers, project reviewers  
**Scope of use**: Entire test cycle during development, delivery, and final acceptance phase.

## 1.2 Summary

The documentation outlines the test specifications, test infrastructure, detailed test cases, execution results, defect logging, and final test conclusions.

**Stakeholders**: Developers, testers, reviewers, and supervisors.

## 1.3 Definitions and Abbreviations

|  |  |
| --- | --- |
| **Term** | **Definition** |
| TC | Test Case |
| QA | Quality Assurance |
| NFR | Non-Functional Requirement |
| FR | Functional Requirement |
| Pass | Test case meets expected outcome |
| Fail | Test case does not meet expected outcome |

## 1.4 References, Standards, and Rules

* FunFlip Game Requirements Document
* Architecture Documentation
* SWE\_SoSe2025\_DELIVERABLES.pdf
* tasks3\_document-check-list.pdf
* swe\_05\_test.pdf

## 1.5 Overview

This document includes:

* Test specification and test infrastructure
* 10 manually executed test cases
* Test protocol including summary and defect log
* Conclusion of testing with final validation statement

# 2. Test Specification

Each test case includes:

* Tested requirement
* Preconditions and postconditions
* Test steps
* Expected result
* Infrastructure used

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **Test case no** | **Test objective** | **Precondition** | **(log.) Test steps** | **Expected result** | **Postcondition** | **Test result** |
| TC01 | Load Start Screen in ≤ 0.5s | App installed and launched | Launch app | Start screen appears quickly | Start screen visible | Pass |
| TC02 | Navigate to Category Selection via Play | On start screen | Tap Play button | Category selection appears | Category screen shown | Pass |
| TC03 | Exit via Quit button | On start screen | Tap Quit button | App exits | App closes | Pass |
| TC04 | Select a Category | On category selection screen | Tap category | Loads level selection screen | Level screen shown | Pass |
| TC05 | Select Difficulty Level | On level selection screen | Tap level | Game board loads | Grid shown | Pass |
| TC06 | Match Pair of Cards | Game board loaded | Flip two matching cards | Cards stay revealed, sound plays | Matched cards remain visible | Pass |
| TC07 | Handle Mismatched Pair | Game board loaded | Flip two mismatched cards | Cards flip back after delay | Cards hidden again | Pass |
| TC08 | Toggle Audio (Mute/Unmute) | Game running | Use mute toggle in options | Audio state toggled | Audio muted/unmuted | Pass |
| TC09 | Handle Back Button | On any screen | Tap back repeatedly | Only one action executed | Previous screen shown or idle | Pass |
| TC10 | Validate Response Time (≤ 0.5s) | Game board loaded | Flip card | Card flips within 0.5s | Card flipped | Pass |

# 3. Test Protocol

## Test Results Summary

|  |  |  |
| --- | --- | --- |
| **Test Case** | **Result** | **Notes** |
| TC01 | Pass | Fast start screen load |
| TC02 | Pass | Navigation worked |
| TC03 | Pass | Quit functionality correct |
| TC04 | Pass | Category screen working |
| TC05 | Pass | Grid loaded properly |
| TC06 | Pass | Match logic works |
| TC07 | Pass | Mismatch flips back |
| TC08 | Pass | Mute/unmute works |
| TC09 | Pass | Back button debounced |
| TC10 | Pass | Meets timing requirement |

## Defect Log

|  |  |  |
| --- | --- | --- |
| **Test Case** | **Defect Class** | **Description** |
| TC07 | 5 (Cosmetic) | Slight delay in flip-back animation |
| TC04 | 4 (Minor UI) | Button alignment slightly off |

## Conclusion

All required test cases were executed successfully.  
**Result**:

* No critical defects (Class 1–3)
* Minor cosmetic/UI issues (Class 4–5) accepted for delivery

The system meets all acceptance criteria and is ready for formal handover.

# 5. Index

Table of Contents

[1. Introduction 1](#_Toc201801350)

[1.1 Purpose 1](#_Toc201801351)

[1.2 Summary 1](#_Toc201801352)

[1.3 Definitions and Abbreviations 1](#_Toc201801353)

[1.4 References, Standards, and Rules 1](#_Toc201801354)

[1.5 Overview 2](#_Toc201801355)

[2. Test Specification 2](#_Toc201801356)

[3. Test Protocol 3](#_Toc201801357)

[Test Results Summary 3](#_Toc201801358)

[Defect Log 3](#_Toc201801359)

[Conclusion 4](#_Toc201801360)

[5. Index 4](#_Toc201801361)