# Test Plan

## Scope:

The scope of the test is to find situations where the developed application fails or does not meet requirements specifications. It also tests the compatibility of the application on various devices.

**Features to be tested:**

- Collision detection
- Avatar swap
- Face Detection
- Objects spanning and motion
- Reward system
- Game Over system

**Test Approach:**

- Test game on different android versions on separate devices with different screen sizes and aspect ratios.
- Test boundary conditions with face position at the edges of screen
- Test functionality of all features
- Test performance with the fast-moving subjects.
- Test Reward system with large scores.
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## Resource Allocation:

| **Tester** | **Test** |
|---|---|
| Rakshana Bagavathi | Unit and System Testing |
| Aneerban Chakraborty | Performance and Compatibility Testing |
| Rohan Aswani | Integration Testing |

## Environment:

The tests are performed in a controlled environment on select hardware.

**Hardware Used for Unit, System, and Integration testing:**

Pixel 6

Android Version: 12

Screen Resolution: 2400 x 1080

**Hardware Used for Performance and Compatibility Testing:**

Pixel 6
- Android Version: 12
- Screen Resolution: 2400 x 1080
- Processor: Google Tensor

Samsung Galaxy S10
- Android Version: 12
- Screen Resolution: 3040 x 1440
- Processor: Samsung Exynos 9820

OnePlus 6T
- Android Version: 11
- Screen Resolution: 2280 x 1080
- Processor: Qualcomm Snapdragon 845

## Tools:

JIRA would be used as a tool for the reporting of Bugs found. Application build using unity as APK would be tested on the devices.

## Test Cases:

| Id | Test Case | Input | Expected Output | Pass or Fail |
|---|---|---|---|---|
| **1.** | Face Detection with the face on the left border | Face at left border | Face detected | pass |
| **2.** | Face Detection with the face on the right border | Face at right border | Face detected | pass |
| **3.** | Face Detection with the face on top border | Face at top border | Face detected | pass |
| **4.** | Face Detection with the face on the bottom border | Face at bottom border | Face detected | pass |
| **5.** | Face Detection in the middle of the screen | Face at middle of screen | Face detected | pass |
| **6.** | Collision Detection with the face on the left border | Face at left border, object at left border | Collision detected | fail |
| **7.** | Collision Detection with the face on the right border | Face at right border, object at right border | Collision detected | fail |
| **8.** | Collision Detection with the face on the top border | Face at top border, object on face | Collision detected | pass |

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|---|---|---|---|---|
| **9.** | Collision Detection with the face on the bottom border | Face at bottom border, object on face | Collision detected | pass |
| **10.** | Collision detection in the middle of the screen | Face at middle of screen, object on face | Collision detected | pass |
| **11.** | Falling objects on the left border | Object at left border | Object falls freely | pass |
| **12.** | Falling objects on the right border | Object at right border | Object falls freely | pass |
| **13.** | Reward system for score INT_MAX | Score set to INT_MAX | System does not crash | pass |
| **14.** | Game Over with fireball collision | Fireball over face | Game Over | pass |

## Failed Test Cases:

The following test cases failed:

1. Collision Detection with the face on the left border.
2. Collision Detection with the face on the right border.

The failed test cases are not essential to the gameplay and are rare and non-critical. Therefore, these cases have low priority.