



Systematic Approach to Game Testing

White Paper - Version 1.0

Overview

Game testing is vital to ensure both that the game not only actually works but also plays like it was intended to. Game Testing is a time-consuming, labor-intensive task. It's also very expensive. The reality is that sometimes companies cannot afford the ideal testing set up. Unfortunately, many then opt for what, on the surface, appears to be a less expensive path: hiring large numbers of low-paid and low-skilled game testers.

Industrial Challenges in Game testing

Faulty software could decimate a brand's reputation and profits. Stringent tight timelines. Code Written by Inexperienced and/or Overworked Developers resulting in errors in the code. Multiple Layers of Acceptance Required. The Development Process is Typically Not as Repeatable as it should be. Game developers must successfully interact with graphics libraries to maximize graphic effects and achieve the realism that gamers demand.

The Reality of Budget Constraints

No matter how convinced we may be of the necessity of thorough games testing, it is also a known fact that testing is complex and expensive. Not only are companies paying the salaries of the testing team, but you also have to pay for equipment and lab space. The more complex the requirements, the more salaries, hardware, and space needed. Budgets have limitations and for many companies, this means opting to use a larger number of less-skilled, less-highly-paid games testers instead of putting together a smaller, more highly skilled team. On the surface, this seems logical, however, that solution has significant drawbacks:

The less-expensive testers are less skilled and they cannot reliably find problems. They lack an understanding of testing methodology and can easily get lost in the game experience and waste time playing games instead of testing. Without hands-on guidance, their testing can lack thoroughness. Using less-skilled testers isn't a scalable solution. The number of testers needed to test, for example, a massively multiplayer online game can be staggering and the space needed to house them prohibitive.

The Ideal Game Testing Methodology

Scope and Definition

In a simplistic view, testing is done mainly to identify bugs found in the software, so the problem can be removed. The overall test process includes test planning, test design, testing execution, regression testing and bug reporting.

- Game testing focuses on the functionality or playability aspects of the game some of which include.
- Testing the user interface (e.g., the selection menus and the use of buttons)
- Using the Game Pad and Understanding the Game Rules
- Look and Feel (e.g., the graphics and animation)
- Localization and the actual game play.

Identify the Test Requirements

A requirement is an objective that must be met. Game Testing outlines the testing requirements for each game and specifies when and how the game and game components will be tested. This document includes:

- List of features in the game
- External designs of the game
- Test Entry Criteria
- Test Strategy
- Test Planning and Execution
- Test Summary report

Following the test requirements, the testers work to develop a Test Plan and Test Cases.

Define Timelines

A number of iterations for testing each new or updated game feature. A complete cycle of regression testing for each build. Sufficient regression testing of the previously Critical, Closed bugs. A full regression testing expecting to test every event/world/environment object and triggers in the game.

Systematic Game Testing Technique

Systematic Game Testing means examining every part of a game. These parts include:

- The menu and the menu functions
- Art (character model, texture, terrain or world, crowd, objects, etc.)
- Animation (the like and feel of the movement, realism, frame rate)
- Sound and the sound effect (in conjunction with the facial animation, e.g. lip sync, and the animation sequence), music
- Camera (cinematic view, zoom in and out, replay)
- Game flow and logic
- World/level/scene
- The player and the action attributes,
- The condition to advance to the next level (what are the rules?)
- The use of environmental objects,
- The event/object triggers, and the scoring
- Progressive levels of difficulty,
- The AI logic (for both defensive play and offensive play; player movement and positioning),
- Statistics (pre-game and in-game like player statistics and high score),
- Title screens,
- NIS (Non-Interactive Sequence),
- SFX (Special effect)
- Any movie clip,
- The game pad,
- The use of multi-button actions (also called button mashing),
- The ease of use of the button functions,
- The shock/vibration effect of the game pad,
- The use of digital and analog mode
- Legal text, and the game options (game start/menu selection, hints, game pause, pause menu options, and scrolling, i.e. cycling through the available options on the screen, etc.)

Conclusion

The Ideal Game Testing Methodology enables testing organizations to manage every stage of the game testing process effectively and efficiently resulting in the ability to deliver high quality gaming products.

About STC

STC ThirdEye Technology (India) Pvt Ltd is India's largest Independent software testing organization providing End-to-End testing Services. We build and operate dedicated India-based testing centers for our customers with the latest computing and data communication technologies, and deliver our services, with high standards of security and confidentiality. Consistent qualities of deliverables under compressed time schedules enable us to get repeat business. We help Fortune 500 ERP, BFSI, Healthcare, Gaming and Telecom solution providers We are ISO 9001:2000 certified organization. For more details, please visit us at www.stcthirdeye.com

Disclaimer

The Whitepaper series presents reports on subjects in the sphere of activities of STC ThirdEye Technology (India) Pvt Ltd that are to be considered in the interest of wider public. These papers are part of the ongoing studies and authors will be glad to receive your comments. The views expressed in these papers are to be regarded as those of the author and should not be interpreted as reflecting the views of the management of STC ThirdEye Technology (India) Pvt Ltd. STC ThirdEye Technology (India) Pvt Ltd assumes no responsibility for any actions taken by Anybody based on the information provided in this paper.