TEST PLAN

1. Introduction

1.1 Purpose

The purpose of this test plan is to define the strategy, scope, and resources required for thoroughly testing the TinyFlix video streaming web application. This document serves as a guide for the QA team to validate the application's stability, functionality, performance, and usability before it is released to users.

TinyFlix is intended to be a fast, lightweight platform for streaming video content, supporting features such as video playback, commenting, bookmarking, search and filter capabilities, and accessibility options. This test plan ensures that all features are tested against their expected behavior and that potential bugs or performance bottlenecks are identified early.

The objective is to provide a structured and repeatable testing process that helps maintain a high standard of quality, guarantees positive user experience, and ensures compliance with accessibility and usability guidelines.

1.2 Scope

The scope of this test plan includes testing all the core functionalities and non-functional requirements of the TinyFlix platform. This encompasses:

- **Functional Testing**: Verifying video playback, commenting system, bookmark features, user interaction flows, and content discovery tools like search, filters, and sorting.

- **Accessibility Testing**: Evaluating the app's compatibility with screen readers, keyboard navigation, and adherence to WCAG 2.1 guidelines.

- **Performance Testing**: Measuring application speed, responsiveness, and load handling on various devices and browsers.

- **Edge Case and Error Handling**: Ensuring the system behaves correctly under unusual or unexpected conditions (e.g., invalid inputs, broken links, network errors).

- **Cross-Browser and Device Testing**: Ensuring the application works seamlessly across multiple browsers and screen sizes, including desktop, tablets, and smartphones.

What is not covered: Backend infrastructure tests, load testing for high concurrency (beyond the defined use-case limits), and security testing.

1.3 References

This test plan is built upon the following sources and documentation:

- **TinyFlix Candidate Instruction Guide** – Provided by the evaluation team for test case context and requirements.

- **TinyFlix Web Application** – The application under test.

- **WCAG 2.1 Guidelines** – Used for accessibility standards and verification.

- **Bug Report Template** – Standardized format for reporting identified bugs and defects.

- **Cypress Documentation** – Reference for automated testing framework.

- **Browser Compatibility Matrix** – For verifying UI behavior across supported browsers and screen sizes.

2. Test Strategy

2.1 Testing Approach

- Manual testing for initial exploration and bug identification

- Automated testing for regression testing and continuous integration

- Accessibility testing using WCAG guidelines

- Performance testing for responsiveness and load handling

2.2 Test Environment

- **Browsers**: Chrome, Firefox, Safari, Edge (latest versions)

- **Devices**: Desktop, Tablet, Mobile

- **Screen Readers**: NVDA, VoiceOver, JAWS

2.3 Test Data

- Sample videos with various durations and formats

- User accounts with different permission levels

- Edge case data for validation testing

3. Test Cases

3.1 Video Playback

TC-001: Video Play/Pause
Description: Verify that videos can be played and paused
Prerequisites: Application is loaded, video is available
Test Steps:

- Click on a video card

- Click the play button

- Verify video starts playing

- Click the pause button

- Verify video pauses
  Expected Results: Video plays/pauses as expected
  Actual Results: Video failed to load; error displayed
  Status: Fail

TC-002: Volume Control
Description: Verify that volume can be adjusted
Prerequisites: Application is loaded, video is playing
Test Steps:

- Play a video

- Adjust volume slider

- Verify volume changes

- Mute the video

- Verify video is muted
  Expected Results: Volume changes, mute works
  Actual Results: Search did not return any results
  Status: Fail

TC-003: Playback Rate
Description: Verify playback rate changes
Prerequisites: Application is loaded, video is playing
Test Steps:

- Play a video

- Change playback rate to 1.5x

- Change playback rate to 0.5x
  Expected Results: Video reflects selected speed
  Actual Results: Video failed to load; error displayed
  Status: Fail

3.2 Search and Filter

TC-004: Search by Title
Description: Verify video search by title
Prerequisites: Application is loaded
Test Steps:

- Enter a title

- Click search
  Expected Results: Matching videos shown
  Actual Results: Search did not return any results
  Status: Fail

TC-005: Search by Tags
Description: Verify search by tags
Prerequisites: Application is loaded
Test Steps:

- Enter a tag (e.g., #travel)

- Press Enter
  Expected Results: Tag-matching videos displayed
  Actual Results: Search did not return any results
  Status: Fail

TC-006: Filter by Recent
Description: Verify filtering by recency
Prerequisites: Application is loaded
Test Steps:

- Select "Recent" from filter dropdown
  Expected Results: Only recent videos shown
  Actual Results: Search did not return any results
  Status: Fail

3.3 Bookmarks

TC-007: Add Bookmark
Description: Verify bookmark functionality
Prerequisites: Video is playing
Test Steps:

- Click bookmark icon

- Check bookmarks list
  Expected Results: Bookmark added correctly
  Actual Results: Bookmark is shown even before the video loads
  Status: Fail

TC-008: Navigate to Bookmark
Description: Verify jumping to bookmark timestamp
Prerequisites: Bookmark exists
Test Steps:

- Click on bookmark
  Expected Results: Video jumps to correct timestamp
  Actual Results: Video does not jump correctly.
  Status: Fail

3.4 Comments

TC-009: Add Comment
Description: Verify adding comments
Prerequisites: Application loaded, video open
Test Steps:

- Type a comment

- Click "Post Comment"
  Expected Results: Comment added below video
  Actual Results: Comment was posted but UI got distorted
  Status: Fail

TC-010: Reply to Comment
Description: Verify replying to existing comments
Prerequisites: Comment exists
Test Steps:

- Type a reply

- Click "Reply"
  Expected Results: Reply shown under comment
  Actual Results: Reply appears as same user.
  Status: Fail

3.5 Accessibility

TC-011: Keyboard Navigation
Description: Keyboard accessibility
Prerequisites: App loaded
Test Steps:

- Use Tab, Enter, and arrow keys
  Expected Results: All features accessible by keyboard
  Actual Results: Keyboard navigation works for most buttons
  Status: Fail

TC-012: Screen Reader Compatibility
Description: Test screen reader support
Prerequisites: Screen reader active
Test Steps:

- Navigate app using screen reader
  Expected Results: Content is read properly
  Actual Results: Screen reader does not read content.
  Status: Fail

3.6 Error Handling

TC-013: Network Error
Description: Handle network failure
Prerequisites: Disconnect internet
Test Steps:

- Play a video
  Expected Results: Show "Network error" message
  Actual Results: No error message displayed on disconnect.
  Status: Fail

TC-014: Invalid Input
Description: Validate bad inputs
Prerequisites: App loaded
Test Steps:

- Enter empty or too long comment
  Expected Results: Show error message
  Actual Results: Login fails correctly with message
  Status: Fail

4. Test Execution

4.1 Test Execution Schedule

- Manual Testing: Day 1–2

- Automated Testing: Day 3–4

- Accessibility Testing: Day 5

- Performance Testing: Day 6

4.2 Test Execution Results

Test Case ID	Description	Status	Notes
TC-001	Video Play/Pause	Fail	Video does not play on click
TC-002	Volume Control	Pass	Volume slider and mute function correctly
TC-003	Playback Rate	Fail	Playback speed options are non-functional
TC-004	Search by Title	Fail	No videos displayed for valid input
TC-005	Search by Tags	Fail	Tags not recognized or returning results
TC-006	Filter by Recent	Fail	Filtering options have no effect
TC-007	Add Bookmark	Fail	Bookmark appears but video not playing

Test Case ID	Description	Status	Notes
TC-008	Navigate to Bookmark	Fail	Video does not jump correctly
TC-009	Add Comment	Pass	Comment is added and displayed properly
TC-010	Reply to Comment	Fail	Reply posted as same user only
TC-011	Keyboard Navigation	Pass	Tab and Enter work for all elements
TC-012	Screen Reader Compatibility	Fail	Screen reader does not read content
TC-013	Network Error	Fail	No error message displayed on disconnect
TC-014	Invalid Input	Pass	Proper validation and error message shown

5. Defect Tracking

5.1 Defect Summary

Severity	Count
Critical	[3]
High	[4]
Medium	[2]
Low	[2]

5.2 Defect Details

Refer to the Bug Report document for full list and reproduction steps.

6. Test Coverage

6.1 Functional Coverage

- Video Playback: [60%]
- Search and Filter: [40%]
- Bookmarks: [50%]
- Comments: [70%]

6.2 Non-Functional Coverage

- Accessibility: [50%]
- Performance: [30%]

- Error Handling: [60%]

7. Conclusion

7.1 Summary

The testing of the TinyFlix video streaming application was conducted against 14 planned test cases covering core functionalities such as video playback, user interaction, search and filter features, bookmarks, accessibility, and error handling. Out of the 14 test cases executed, only 4 passed successfully, while the remaining 10 failed, resulting in an overall pass rate of approximately 29%.

The passed tests include volume control (TC-002), adding comments (TC-009), keyboard navigation (TC-011), and invalid input handling (TC-014). These components are functioning as expected, with users able to adjust volume levels, post comments, navigate using the keyboard, and receive proper error messages for invalid inputs.

However, the majority of the features failed during testing. Critical functionality like video playback (TC-001) is not working, as videos do not play upon clicking. Playback rate controls (TC-003) are present but non-functional. Search by title and tags (TC-004 and TC-005) do not return results, and filtering by recency (TC-006) is also ineffective. Bookmark-related actions (TC-007 and TC-008) fail because the video does not play or jump to bookmarked timestamps. The reply function (TC-010) incorrectly posts replies using the same user instead of simulating conversation from different users. Accessibility compliance (TC-012) is lacking, as screen readers fail to interpret the page content. Furthermore, the application does not show appropriate error messages when network connectivity is lost (TC-013).

In conclusion, while certain user interface elements and validations are working, major functional gaps and accessibility issues exist in the current version of TinyFlix. These problems significantly impact the overall user experience. Immediate attention is recommended to address critical defects in video playback, search/filter functionality, bookmarking, and error handling. Improvements in accessibility compliance and broader test coverage will also be necessary before the application can be considered production-ready.

7.2 Recommendations

- Fix critical bugs related to video playback and auth
- Improve accessibility by adding alt tags and subtitles
- Enable proper sort, search, and filter UX
- Improve feedback for invalid inputs and errors.

8. Appendices

8.1 Test Environment Setup

Instructions for cloning repo, running app locally, installing dependencies, and using test credentials.

8.2 Test Data

Sample users: Admin, Viewer
Video data with tags, formats, timestamps, and durations
Comment/reply chains for validation

8.3 References

- TinyFlix Candidate Instructions

- WCAG 2.1 Guidelines

- Cypress Docs

- Bug Report Template