CS617 Chapter 12 - Post-Test NFRs

Human-readable semantic twin of **NFRs.angel.lisp**
Status: **USER-AUTHORIZED POST-TEST AUTHORITY - REV 2**

Purpose and provenance

This document is a post-functional-test augmentation for the Chapter 12 Recursion Angel experiment. It preserves the original functional contract and the pre-NFR Entity B baseline while making later presentation and usability observations explicit requirements.

The content is limited to requirements and observable acceptance conditions. It does not disclose peer source, algorithms, listings, screenshots, teaching notes, TA/Socratic material, routine names, or implementation history.

> **A central lesson of the parity audit is that human conventions and apparently harmless UI freedom are still unspecified behavior until they are written down. If observable parity matters, the relevant degree of freedom must be closed explicitly.**

NF-01 - VTTEST readability

Requirement. Every virtual VTTEST line must compose with the fixed two-column VT overlay so the physical first row reads naturally as `VT 01 ...`: one blank column before a two-digit line number, then one space and text.

Acceptance. Adjacent one-line UP/DOWN scrolling is visually obvious and line identity can be compared naturally with the viewer-origin indicator.

NF-02 - Visible cursor for typed-character input

Requirement. The shared Queens/Hanoi `new n` editor must show the platform-normal blinking cursor immediately after the current input. More generally, when an interactive field accepts typed characters, the insertion position must be visibly marked by a cursor. A surface operated only by function-key selection does not require a cursor.

Acceptance. The cursor follows zero, one, or two typed digits and is disabled whenever the editor exits, including accept, MENU, and BRK.

NF-03 - Hanoi report spacing

Requirement. Shift Hanoi report identity, headings, and cues one virtual column to the right. Do not move the fixed Hanoi move stream.

Acceptance. Report furniture composes cleanly with the VT overlay; move fields remain at columns 3, 10, 17, and 24.

NF-04 - Human-facing typography

Requirement. Use natural mixed case for ordinary human-facing prose and report headings. Preserve formal key names/acronyms and exact lowercase function-key cells required by the functional contract.

Acceptance. Narrative text reads naturally without changing formal controls.

NF-05 - Physical LCD refresh quality

Requirement. Queens progress presentation must not exhibit repeated visible full-screen flashing while remaining on the same progress screen. Unchanged physical regions remain visually stable during in-mode updates. Full redraw on a screen or mode transition is allowed.

Acceptance. Spinner and count remain correct; MENU/BRK responsiveness is unchanged; Queens N=8 still totals 92 solutions; view-mode solution pages remain unaffected. The specific dirty-region technique is open.

NF-06 - Top-menu quiet presentation

Requirement. Top-menu rows 2 and 3 must both be blank. Do not replace them with a slogan, subtitle, helper prompt, or other invented prose.

Acceptance. The only prescribed top-menu content outside the title is the exact action row `[queens][hanoi ][vttest][ ]`.

NF-07 - Queens report spacing

Requirement. Shift Queens report headings, board, and cues one virtual column to the right.

Acceptance. The report composes naturally with the fixed VT overlay, visually reading as `VT N-Queens ...` at the heading.

Interpretive boundary

These clauses constrain observable behavior, not internal architecture. The recursion algorithms, VT storage representation, source decomposition, routine names, and other unspecified HOW remain open. The original functional contract remains authoritative and is not retroactively rewritten.

Parity precision note

The cursor and blank top-menu row demonstrate two forms of specification omission. Humans commonly assume a cursor for typed input; a solver cannot be required to infer that convention. Conversely, when a visible row is left OPEN, a solver may legitimately add useful helper prose. Total observable parity therefore carries a price: every parity-relevant degree of freedom must be specified precisely enough that academic freedom cannot choose a different valid presentation.

Semantic-twin file: NFRs.angel.lisp