









StressSpec Week 7 Progress Report

Sprint 2 – 8-Category Completion (Traceability + Scope)

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Week 7: New Detectors, Rules, UI polish, Tests

Week 7 Highlights

-  Added two new detectors: **Traceability** and **Scope**
-  Updated `RiskCategory` enum and **Factory** registry (now 8 categories)
-  Extended `data/rules.json` with new rules and severities
-  Implemented user-friendly Traceability heuristics + severity downgrades
-  Implemented Scope high-severity escalation for explicit boundary violations
-  Added unit + integration tests; full suite passing
-  Web UI: Category filter updated to include Traceability/Scope
-  Example file to trigger all 8 categories

Code Changes (Core)

- `src/models/risk.py` : add `TRACEABILITY`, `SCOPE` to `RiskCategory`
- `src/factories/detector_factory.py` : register `TraceabilityDetector`, `ScopeDetector`
- `src/detectors/traceability_detector.py` : permissive signals (IDs, AC, test refs); downgrade to Medium when any signal present
- `src/detectors/scope_detector.py` : scope-creep, undefined boundary, third-party w/o spec; escalate to High for explicit phrases and missing constraints
- `data/rules.json` : add `traceability` + `scope` sections (enabled)

Detection Logic (Summary)

Traceability

- Signals: Requirement ID (R### , REQ-# , US-# , FR-# , ABC-123), Acceptance Criteria ("Given/When/Then", "Acceptance Criteria", "AC:"), Test refs ("TC-", "Test Case", "validated by", "QA")
- No signals \Rightarrow single High (default). Partial signals \Rightarrow remaining gaps flagged Medium

Scope

- Scope-creep terms (e.g., "any API", "all platforms", "every browser")
- Undefined external dependency boundaries
- Third-party integration without provider/version/protocol/SLA \Rightarrow High

Testing

- Unit tests:
 - `tests/test_traceability_detector.py`
 - `tests/test_scope_detector.py`
- Integration:
 - `tests/test_integration_new_detectors.py` asserts `traceability` and `scope` categories appear end-to-end
- Result: **72 passed, 0 failed** (14 warnings)

Web UI Updates

- Results page category filter now includes:
 - Traceability , Scope (in addition to existing 6)
- Risk rendering and category summaries are data-driven; new categories auto-appear

Example File (All 8 Categories)

- `example_files/all_categories_sample_requirements.txt`
- Uses `---` separators to avoid over-merging by structured parser
- Triggers: Ambiguity, Missing Detail, Security, Conflict, Performance, Availability, Traceability, Scope

How to Run (Web UI)

```
cd ase-420-individual-project  
python -m venv .venv; . .\.venv\Scripts\Activate.ps1  
pip install -r requirements.txt  
$env:DEBUG="True"; python web\main.py
```

- Open `http://127.0.0.1:8000/`
- Upload the example file above and view detected categories

Week 7 Deliverables Status

- Traceability & Scope detectors implemented
- Factory + Enum wired for 8 categories
- Rules added/enabled; severities set (user-friendly defaults)
- High-severity escalation for explicit scope violations
- Tests: unit + integration, full suite passing
- Web UI filter updated; example file added

Next Steps (Minor)

- Documentation refresh (README / project docs) with examples for the 2 new categories
- Optional: further tune structured parsing continuation heuristics

Week 7 Outcome

8-Category system completed and verified

Detectors integrated, tests passing, UI updated, and example provided for demo.