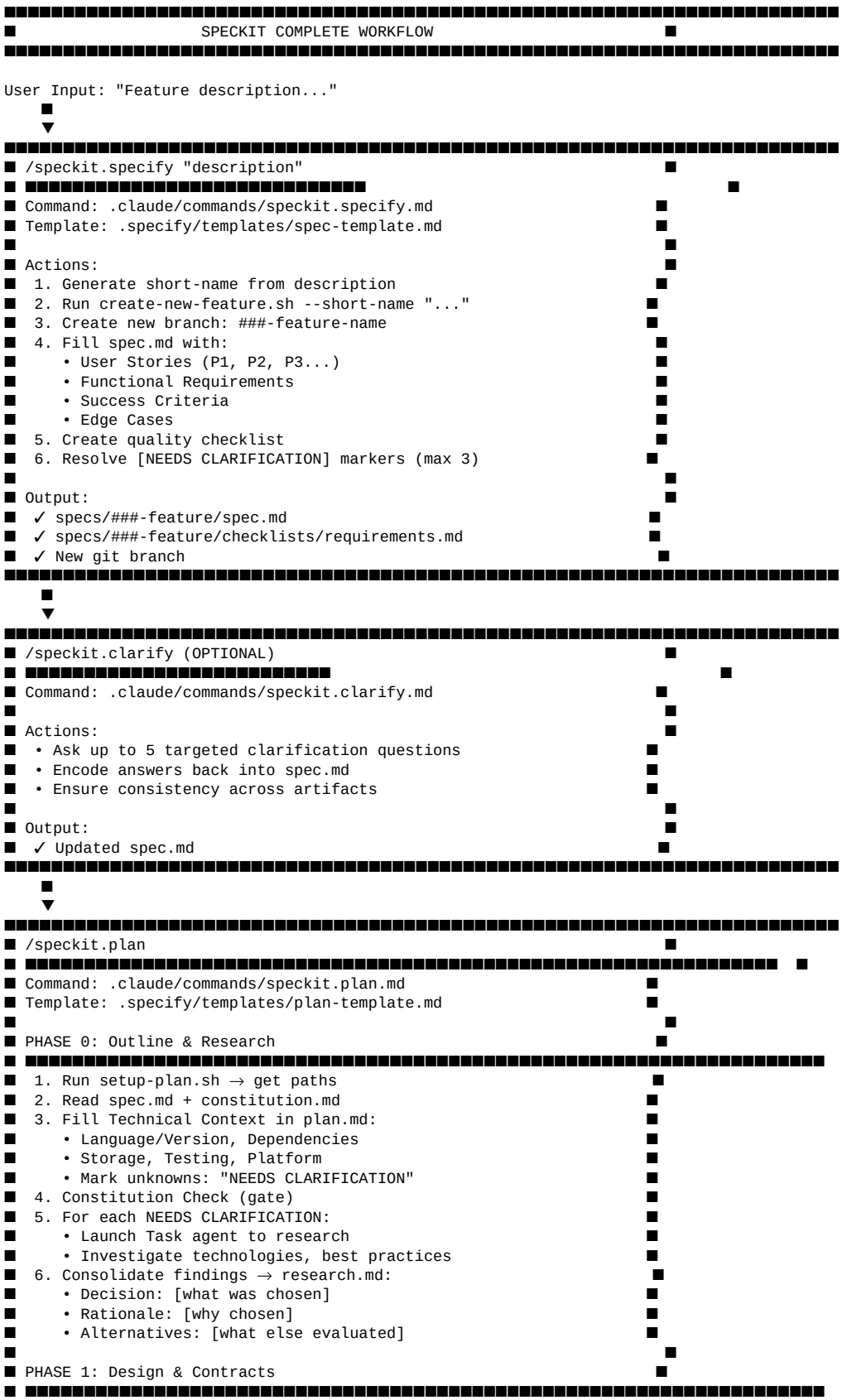
SpecKit Workflow Guide

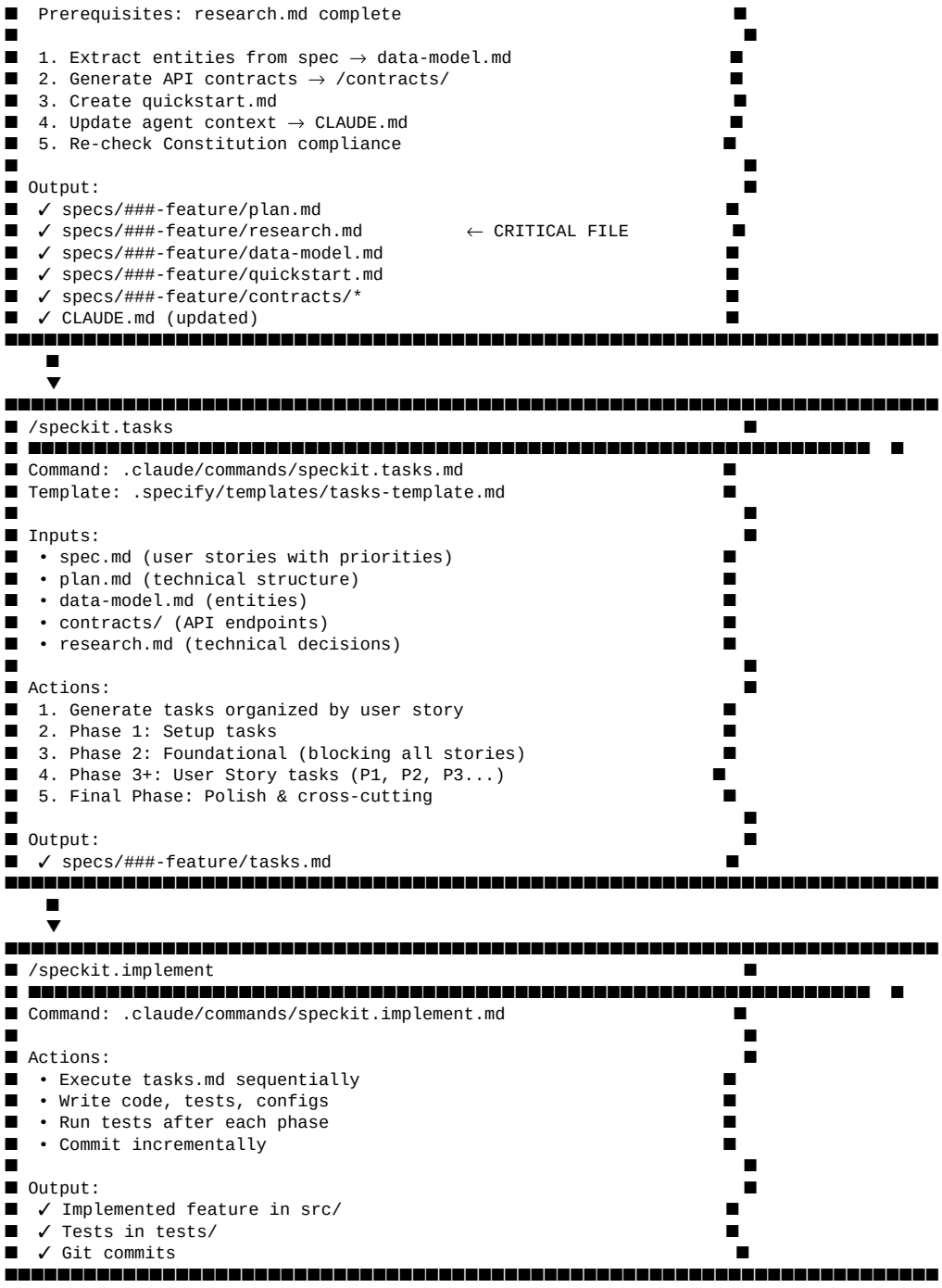
AI Coding Framework - Complete Process Documentation

Generated: 2025-10-26

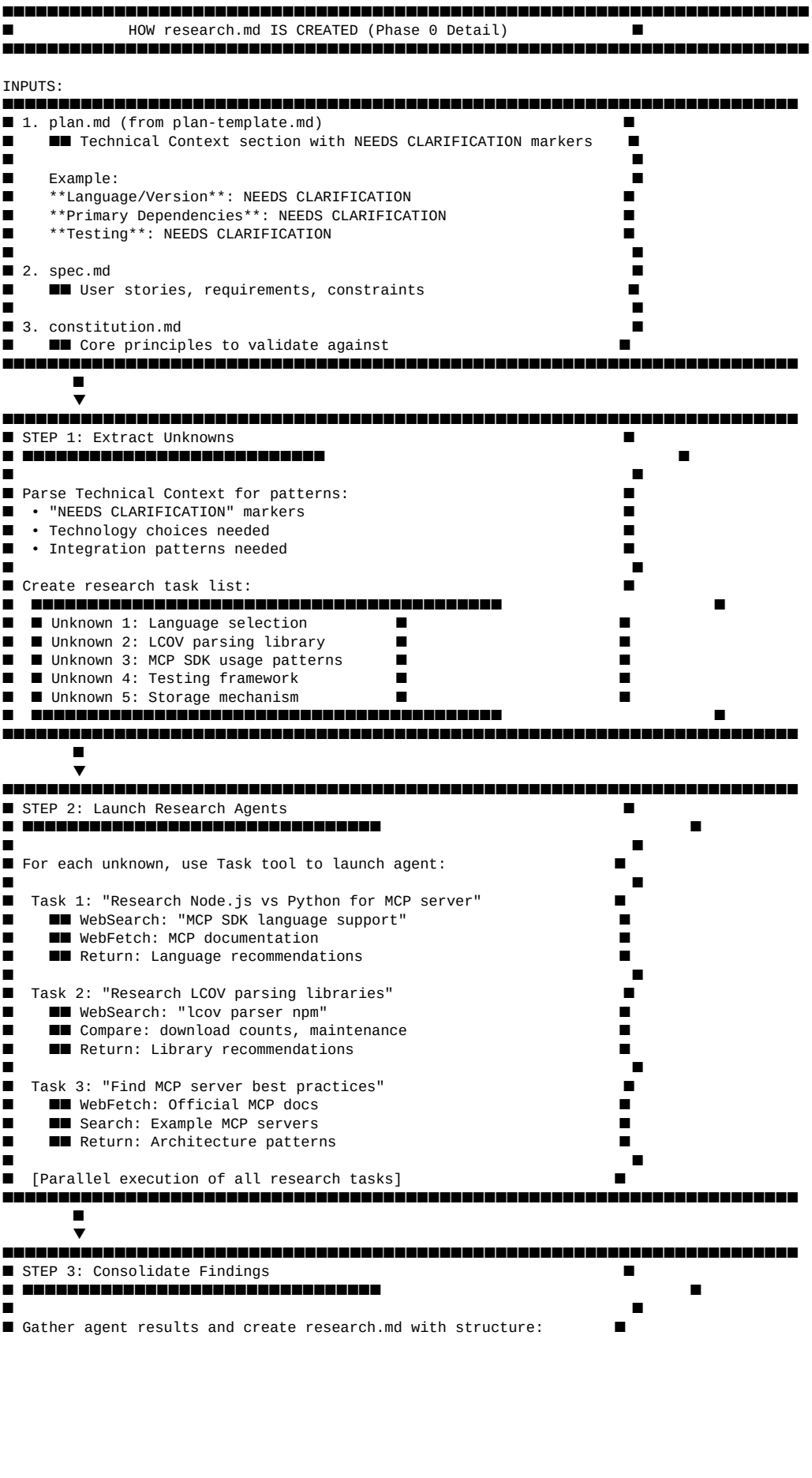
Version: 1.0

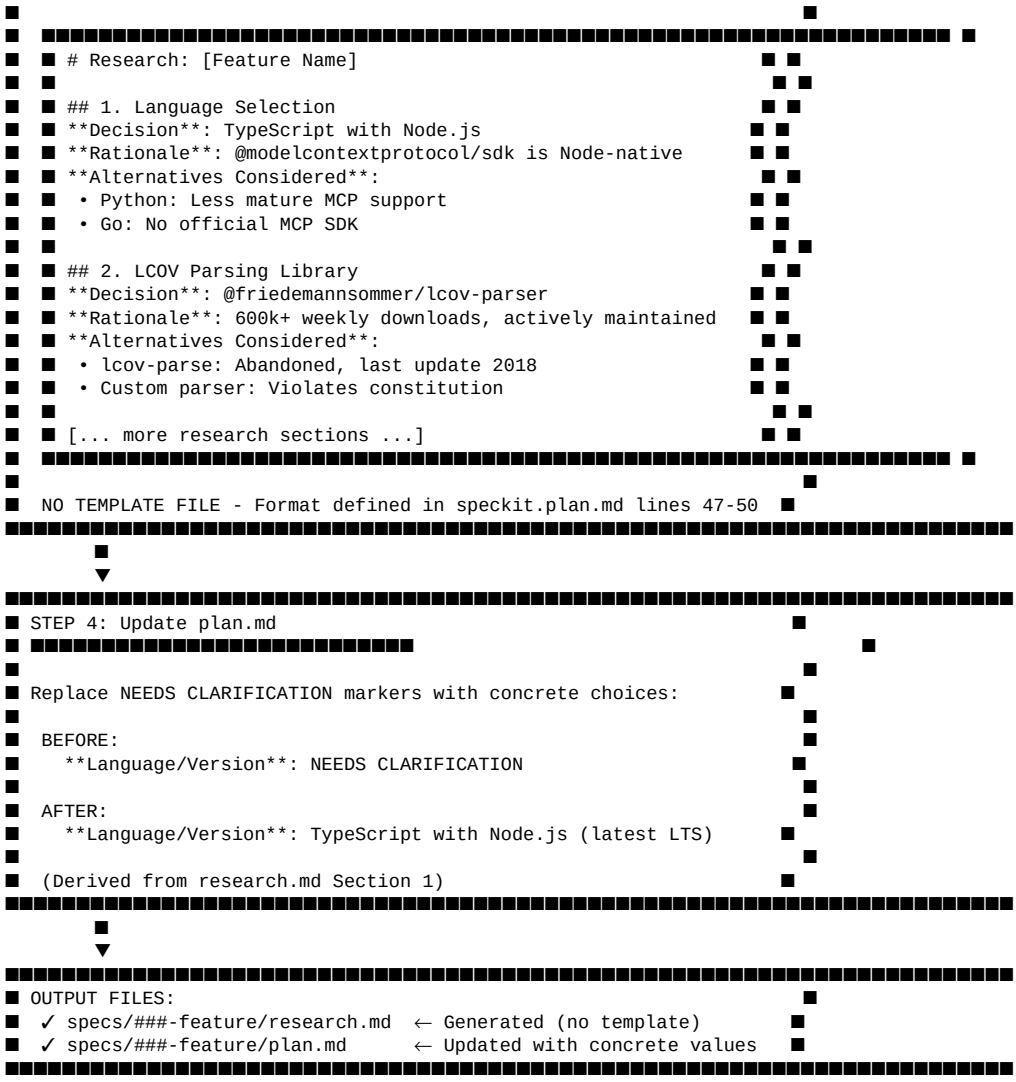
1. Complete Feature Development Flow




Prerequisites: research.md complete
1. Extract entities from spec → data-model.md
2. Generate API contracts → /contracts/
3. Create quickstart.md
4. Update agent context → CLAUDE.md
5. Re-check Constitution compliance
Output:
✓ specs/###-feature/plan.md
✓ specs/###-feature/research.md ← CRITICAL FILE
✓ specs/###-feature/data-model.md
✓ specs/###-feature/quickstart.md
✓ specs/###-feature/contracts/*
✓ CLAUDE.md (updated)
/speckit.tasks
Command: .claude/commands/speckit.tasks.md
Template: .specify/templates/tasks-template.md
Inputs:
• spec.md (user stories with priorities)
• plan.md (technical structure)
• data-model.md (entities)
• contracts/ (API endpoints)
• research.md (technical decisions)
Actions:
1. Generate tasks organized by user story
2. Phase 1: Setup tasks
3. Phase 2: Foundational (blocking all stories)
4. Phase 3+: User Story tasks (P1, P2, P3...)
5. Final Phase: Polish & cross-cutting
Output:
✓ specs/###-feature/tasks.md
/speckit.implement
Command: .claude/commands/speckit.implement.md
Actions:
• Execute tasks.md sequentially
• Write code, tests, configs
• Run tests after each phase
• Commit incrementally
Output:
✓ Implemented feature in src/
✓ Tests in tests/
✓ Git commits

2. research.md Generation Deep Dive






```
# Research: [Feature Name]

## 1. Language Selection
**Decision**: TypeScript with Node.js
**Rationale**: @modelcontextprotocol/sdk is Node-native
**Alternatives Considered**:
 • Python: Less mature MCP support
 • Go: No official MCP SDK

## 2. LCOV Parsing Library
**Decision**: @friedemannsommer/lcov-parser
**Rationale**: 600k+ weekly downloads, actively maintained
**Alternatives Considered**:
 • lcov-parse: Abandoned, last update 2018
 • Custom parser: Violates constitution

[... more research sections ...]
```

NO TEMPLATE FILE - Format defined in speckit.plan.md lines 47-50

STEP 4: Update plan.md

Replace NEEDS CLARIFICATION markers with concrete choices:

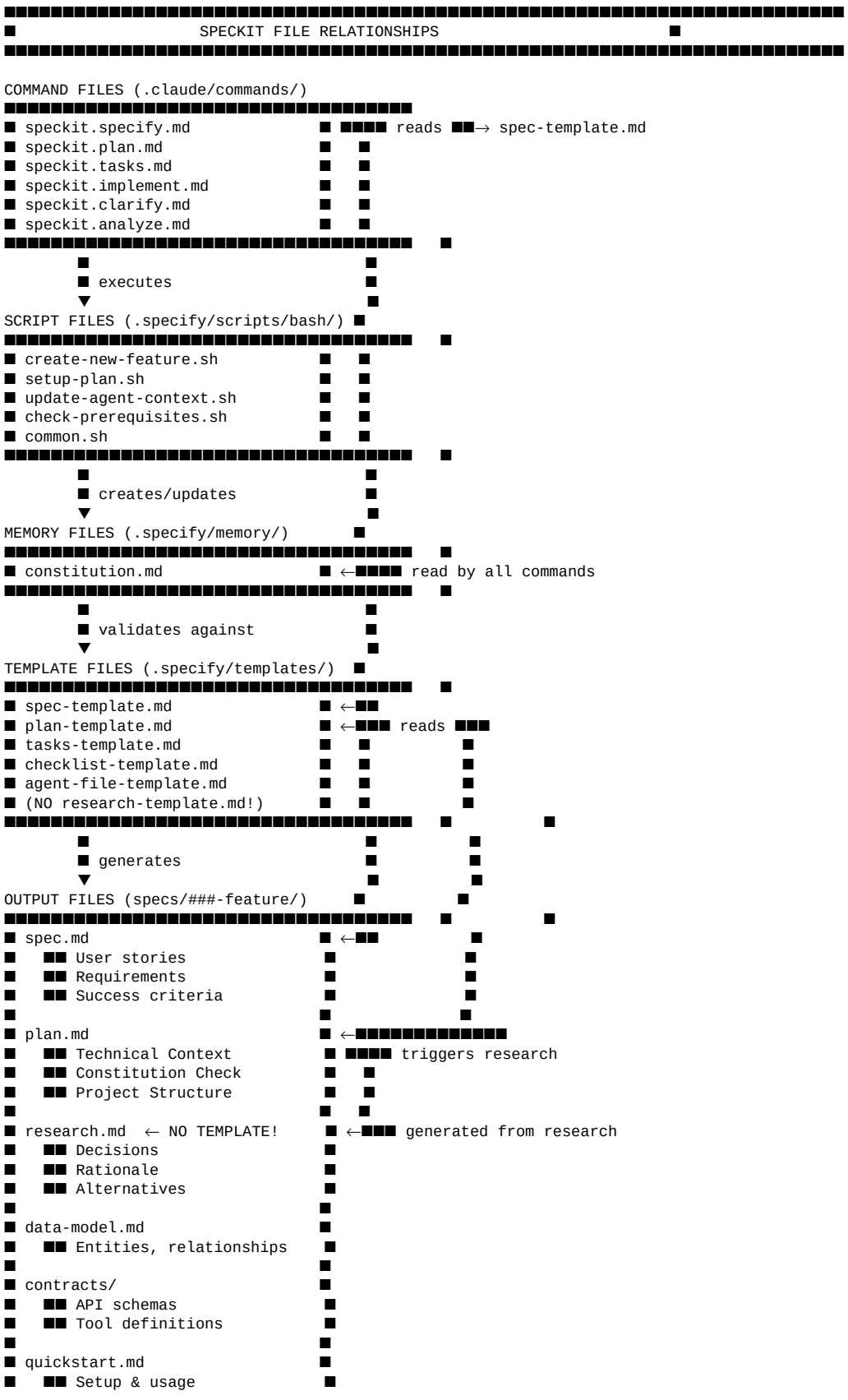
BEFORE:
  Language/Version: NEEDS CLARIFICATION

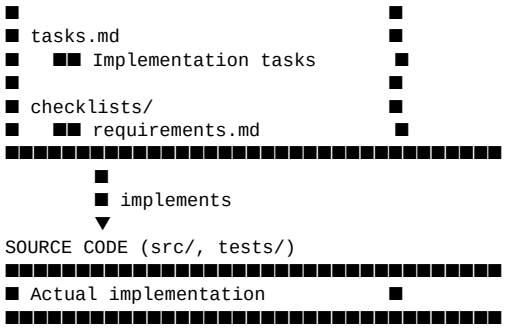
AFTER:
  Language/Version: TypeScript with Node.js (latest LTS)

(Derived from research.md Section 1)

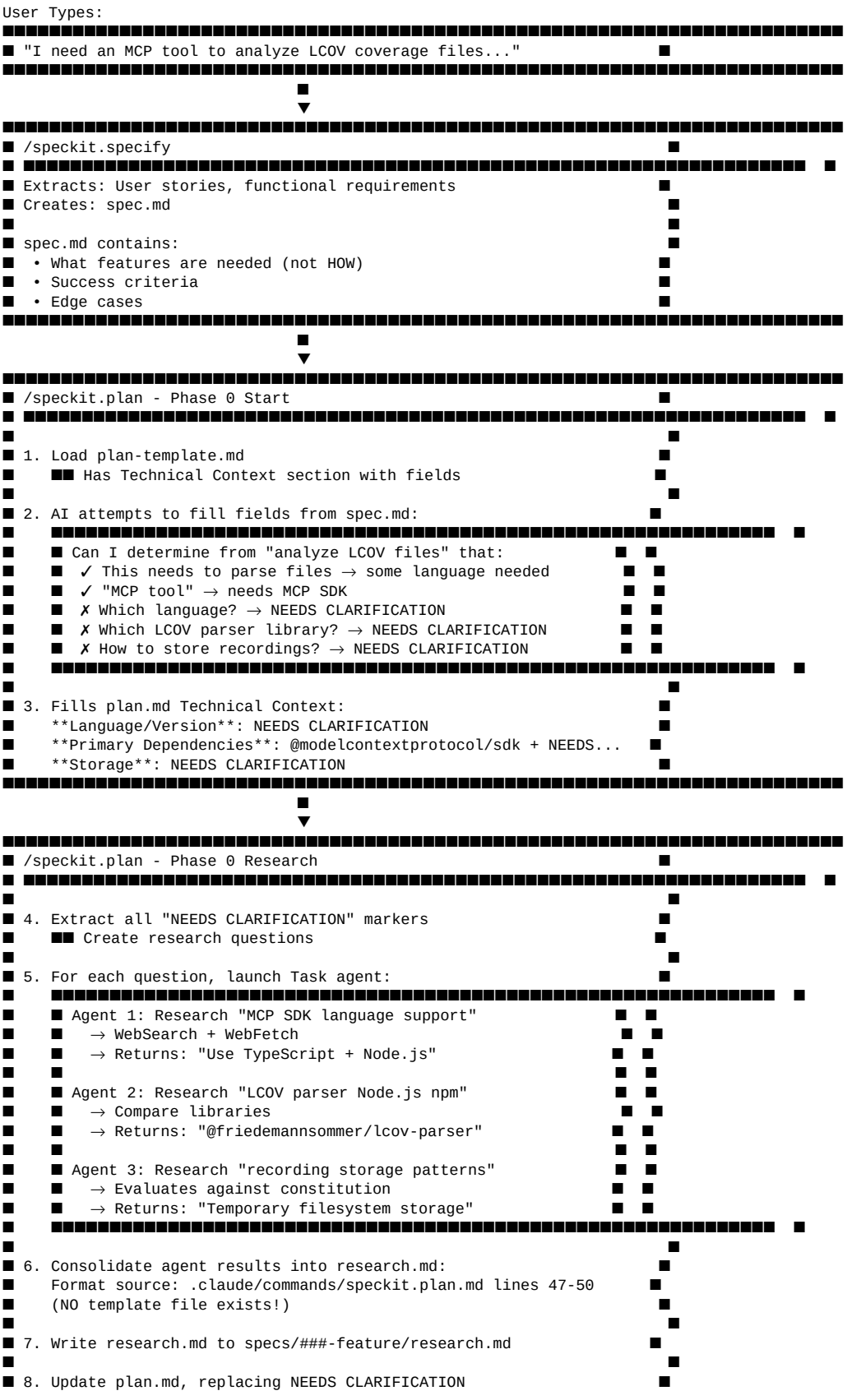
OUTPUT FILES:
 ✓ specs/###-feature/research.md ← Generated (no template)
 ✓ specs/###-feature/plan.md   ← Updated with concrete values

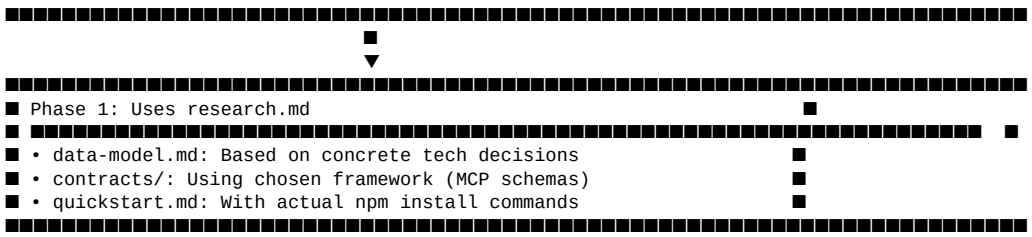
3. File Relationships & Dependencies




tasks.md
Implementation tasks
checklists/
requirements.md
implements
SOURCE CODE (src/, tests/)
Actual implementation

4. Data Flow: From User Input to research.md




Phase 1: Uses research.md
• data-model.md: Based on concrete tech decisions
• contracts/: Using chosen framework (MCP schemas)
• quickstart.md: With actual npm install commands

5. Key Insights

```
KEY FINDINGS:

1. NO research.md TEMPLATE EXISTS
   The research.md file is dynamically generated, not from a template.
   Format is defined in: .claude/commands/speckit.plan.md (lines 47-50)

2. RESEARCH IS TRIGGERED BY UNKNOWNS
   "NEEDS CLARIFICATION" markers in plan.md's Technical Context section
   trigger the research phase.

3. TASK AGENTS DO THE RESEARCH
   Multiple Task agents run in parallel to research:
   • Technology choices
   • Library comparisons
   • Best practices
   • Integration patterns

4. CONSTITUTION VALIDATES CHOICES
   All research results must align with project principles defined in
   .specify/memory/constitution.md

5. RESEARCH INFORMS ALL DOWNSTREAM ARTIFACTS
   research.md results populate:
   • plan.md (Technical Context)
   • data-model.md (entity design)
   • contracts/ (API schema choices)
   • quickstart.md (setup instructions)

FILE LOCATIONS REFERENCE:

Commands:
  .claude/commands/speckit.specify.md
  .claude/commands/speckit.plan.md
  .claude/commands/speckit.tasks.md
  .claude/commands/speckit.implement.md

Templates:
  .specify/templates/spec-template.md
  .specify/templates/plan-template.md
  .specify/templates/tasks-template.md
  (NO research-template.md)

Scripts:
  .specify/scripts/bash/create-new-feature.sh
  .specify/scripts/bash/setup-plan.sh
  .specify/scripts/bash/update-agent-context.sh

Memory:
  .specify/memory/constitution.md

Outputs (per feature):
  specs/###-feature/spec.md
  specs/###-feature/plan.md
  specs/###-feature/research.md          ← Dynamically generated
  specs/###-feature/data-model.md
  specs/###-feature/contracts/
  specs/###-feature/quickstart.md
  specs/###-feature/tasks.md
  specs/###-feature/checklists/

RESEARCH.MD FORMAT:
  For each research topic:
    Decision: [what was chosen]
    Rationale: [why chosen]
    Alternatives considered: [what else was evaluated]
```