

AI Agent Rules for Git Operations

This document provides specific rules for AI agents (like Cursor/Console AI) when performing git operations on this repository.

Overview

Primary Principle: AI assists with git operations, but the user maintains final control over critical operations.

What AI Can Do Directly

Commit Message Generation

- Generate Angular-formatted commit messages following strict format
- Suggest appropriate commit types (feat, fix, docs, etc.)
- Format commit messages with proper structure (subject, blank line, body)
- Use multiple `-m` flags or single `-m` with escaped newlines for proper formatting

Feature Branch Commits

- Create commits on feature branches
- Use informal messages during development ("wip", "refactor X")
- Commit code changes directly to feature branches

Generate Commands

- Suggest git commands for workflows
- Generate merge commands with `--no-ff` flag
- Create command sequences for complex operations

Automatic Operations

- Pre-commit hooks automatically update `version.py` git hash
 - No manual intervention needed for hash updates
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What Requires User Review/Approval

Merges to Main Branch

Process:

1. AI generates merge command: `git merge --no-ff feat/branch-name`

2. AI generates merge commit message in Angular format
3. **User reviews** merge message in editor
4. **User saves/closes** editor to complete merge
5. **User pushes** when ready

Why: Main branch is sacred - requires human oversight

Creating Tags/Releases

Process:

1. AI suggests version number based on commit types
2. AI suggests update to `version.py`
3. **User confirms** version number
4. AI generates commands:
`# Update version.py __version__ to match tag`
`# Commit version change`
`git tag v1.0.0-beta.5`
`git push origin v1.0.0-beta.5`
5. **User reviews** and executes commands
6. **User confirms** tag creation

Why: Releases are critical - require explicit approval

Pushing to Remote

Process:

1. AI suggests push commands
2. **User executes** push commands manually
3. AI should NOT auto-push without explicit user request

Why: Security control - prevents accidental remote changes

Hotfix Operations

Process:

1. AI generates hotfix workflow commands
2. **User reviews** each step
3. **User executes** step by step
4. User confirms each critical operation (tag, push)

Why: Hotfixes are high-risk - require careful manual review

Character Encoding Rules

7-bit ASCII Requirement

AI agents MUST use 7-bit ASCII (characters 0-127 only) in all non-markdown files.

Critical Rule: When creating or modifying any code files, scripts, or configuration files, AI agents must:

- Use only 7-bit ASCII characters
- Replace any non-ASCII characters with ASCII equivalents
- Never use emoji, Unicode symbols, or multi-byte characters in code/scripts

Files Affected:

- All source code files (.py, .js, .ts, .html, .css, etc.)
- All script files (.ps1, .bat, .sh, etc.)
- All configuration files (.json, .yaml, .ini, etc.)
- Documentation source files (.rst, .txt, etc.)

Exception: Markdown files (.md) may contain UTF-8 characters including emoji.

Common Replacements:

- (checkmark) → [OK], OK, or PASS
- (cross mark) → [X], FAIL, or ERROR
- (warning) → WARNING: or WARN:
- (bullet) → * or -

Rationale: PowerShell, batch files, and many other tools can fail to parse files correctly when multi-byte UTF-8 characters are present, leading to cryptic parsing errors.

Commit Message Standards

Standard: All commits MUST follow strict Angular Conventional Commits format, regardless of branch.

Angular Format Structure (Mandatory)

<type>(<scope>): <short summary>

<body>

<footer> (optional, only for BREAKING CHANGE)

Requirements:

- **Type:** One of: feat, fix, docs, style, refactor, perf, test, build, ci, chore
- **Scope:** Optional, lowercase, in parentheses (e.g., (readme), (dashboard))
- **Subject:** Imperative, lowercase, < 50 characters
- **Blank line:** MANDATORY between subject and body
- **Body:** Detailed explanation, wrap at 72 characters, bullet points allowed
- **Footer:** Only for BREAKING CHANGE or issue tracking

For Feature Branch Commits

- Must follow Angular format strictly
- Use appropriate type (feat, fix, docs, refactor, etc.)
- Include body with bullet points describing changes
- Example:
`feat(dashboard): add user dashboard with widgets`

`Implements main dashboard view with widget framework.
Adds real-time data updates and user preferences.`

- Created dashboard view component
- Implemented widget system
- Added API integration for live data

For Merge Commits to Main

- Must follow Angular format strictly:
`feat(dashboard): add user dashboard with widgets`

`Implements main dashboard view with widget framework.
Adds real-time data updates and user preferences.`

- Created dashboard view component
- Implemented widget system
- Added API integration for live data
- **Subject:** User-facing feature description
- **Body:** What the feature does (not implementation details)
- **Format:** Lowercase, imperative, < 50 chars for subject

For Direct Commits to Main (Rare)

- Follow Angular format strictly
- Use appropriate type (fix, docs, chore)
- Include detailed body for significant changes

Version Management

How Version.py Works

- `contest_tools/version.py` contains `__version__` and `__git_hash__`
- Pre-commit hook automatically updates `__git_hash__` before each commit
- `__version__` should match most recent git tag (manual update before releases)

Before Creating a Tag

1. User specifies target version (e.g., v1.0.0-beta.5)
2. AI suggests updating `version.py`:
`__version__ = "1.0.0-beta.5"`
3. User confirms version number
4. AI generates commit message:
`chore: bump version to 1.0.0-beta.5`
5. User commits version change
6. User creates tag: `git tag v1.0.0-beta.5`
7. User pushes tag: `git push origin v1.0.0-beta.5`

Untagged Commits

- Version string will be: "1.0.0-beta.5-3-gabc1234" (most recent tag + distance + hash)
 - Git hash always included: "1.0.0-beta.5 (commit abc1234)"
 - This works for bug reports - version + hash = exact code state
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Workflow Examples

Example 1: Feature Development

User: "Commit these changes with a message about adding the dashboard"

AI:

1. Generates commit message following strict Angular format:

`feat(dashboard): add user dashboard with widgets`

Implements main dashboard view with widget framework. Adds real-time data updates and user preferences.

- Created dashboard view component
- Implemented widget system
- Added API integration for live data

2. Executes: `git commit` with properly formatted message (using multiple `-m` flags or single -

3. Confirms: "Committed to feat/dashboard branch"

Example 2: Merge to Main

User: "Merge feat/dashboard into main"

AI:

1. Generates: git checkout main && git pull
2. Generates: git merge --no-ff feat/dashboard
3. Opens editor with merge message:
"feat.dashboard): add user dashboard with widgets

Implements main dashboard view with widget framework."

4. Waits for user to review/edit and save
5. Confirms: "Merge complete. Ready to push?"
6. User: "Push it"
7. AI suggests: git push origin main
8. User executes manually

Example 3: Creating a Release Tag

User: "Tag the next beta release"

AI:

1. Checks recent commits for version bump
 2. Suggests: "Based on recent commits, suggest v1.0.0-beta.5"
 3. User: "Yes"
 4. AI updates version.py __version__ = "1.0.0-beta.5"
 5. AI generates: git commit -m "chore: bump version to 1.0.0-beta.5"
 6. AI suggests commands:
git tag v1.0.0-beta.5
git push origin v1.0.0-beta.5
 7. User reviews and executes
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Error Handling

If Pre-commit Hook Fails

- AI should explain the error
- Do NOT skip hooks without user permission
- Fix the issue (e.g., update version.py manually) before proceeding

If Merge Conflicts

- AI should detect conflicts
- AI should suggest resolution steps

- **User must resolve** conflicts manually
- AI can help review conflict resolution

If Version Mismatch

- AI should warn if `version.py` doesn't match recent tag
 - AI should suggest updating version before tagging
 - User must confirm version number
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Safety Checks

Before any critical operation, AI should:

1. Confirm current branch (`git branch`)
 2. Show recent commits (`git log --oneline -5`)
 3. Warn if on main branch for direct commits
 4. Suggest creating feature branch if not on one
 5. Verify pre-commit hooks are installed
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Session Context & Workflow State

HANOVER.md Pattern (Optional)

For complex multi-session workflows, a `HANOVER.md` file may exist at the repository root to maintain workflow state between agent sessions.

When HANOVER.md Exists:

- AI agent **must** check for `HANOVER.md` at session start
- AI agent **must** read and incorporate workflow state from `HANOVER.md`
- AI agent **should** update `HANOVER.md` as work progresses
- AI agent **should** overwrite `HANOVER.md` when switching sessions

When HANOVER.md Does NOT Exist:

- AI agent proceeds with standard context (git history, documentation, code, user request)
- AI agent does NOT create `HANOVER.md` unless explicitly requested
- Standard workflow: User request → Agent analyzes code/docs → Agent performs task

When to Use HANOVER.md:

- Complex multi-session workflows (e.g., version cleanup, major refactoring)
- Multi-step processes spanning multiple sessions (test → patch → tag → cleanup)

- Context that spans multiple sessions (current state, next steps, decisions)

When NOT to Use HANOVER.md:

- Simple bug fixes (agent can analyze code directly)
- Single-session tasks (new features, quick fixes)
- Tasks with sufficient context in code/docs/git history

Agent Behavior:

1. **Session Start:** Check for HANOVER.md (non-blocking)
2. **If Found:** Read workflow state, incorporate into context
3. **If Not Found:** Proceed with standard context gathering
4. **During Work:** Update HANOVER.md if it exists and workflow state changes
5. **Session End:** Overwrite HANOVER.md with current state if it exists

File Location: Repository root (HANOVER.md)

Git Treatment: Committed but overwritten (allows backup in git history while maintaining current state)

Summary

AI's Role: Generate, suggest, assist, format **User's Role:** Review, approve, execute, control **Balance:** AI efficiency + Human oversight = Safe, consistent workflow