Solution:

1. Create a project file
   index.html:
   <h1>Git Hooks Demo</h1>

2. Initialize Local Git Repository
   Command: git init

3. Check Status
   Command: git status

4. Add File to Staging
   Command: git add index.html

5. Create a Pre-Commit Hook (enforce coding rule)
   Go to hooks folder:
   cd .git/hooks
   Create a file named pre-commit (no extension)
   pre-commit
   #!/bin/sh

   if grep -q "TODO" index.html; then
     echo "Commit blocked: Remove TODO comments before committing."
     exit 1
   fi
   Make it executable:
   chmod +x pre-commit

6. Try to Commit with Invalid Code
   Edit index.html
   <h1>Git Hooks Demo</h1>
   <!-- TODO: improve UI -->
   Commit command:
   git commit -m "Added TODO comment" (Commit will FAIL due to pre-commit hook.)

7. Fix the Code and Commit Again
   Remove TODO comment and save file.
   Commands:
   git add index.html
   git commit -m "Initial commit without TODO"

8. Create a Post-Commit Hook (display message after commit)
   Create post-commit file:
   post-commit

#!/bin/sh
echo "Commit completed successfully!"
Make it executable:
chmod +x post-commit

9. Make Another Commit to See Post-Commit Hook
   Commands:
   git commit --allow-empty -m "Testing post-commit hook"

10. Create a Pre-Push Hook (check branch before pushing)
    Create pre-push file:
    pre-push
    #!/bin/sh
    branch=$(git branch --show-current)

    if ["$branch" != "main"]; then
     echo "Push blocked: Only main branch is allowed."
     exit 1
    fi
    Make it executable:
    chmod +x pre-push

11. Push to GitHub (Only from main branch)
    Command: git push origin main

Comparison: Git Commands in CMD vs Git GUI Tool

1. CMD requires typing Git commands, whereas Git GUI performs the same actions using buttons and menus.
2. CMD is faster for experienced users, whereas Git GUI may take more time due to navigation.
3. CMD provides complete control over all Git features, whereas Git GUI offers limited advanced options.
4. CMD displays detailed error messages, whereas Git GUI shows simplified or hidden errors.
5. CMD improves understanding of Git internals, whereas Git GUI focuses on ease of use rather than concepts.