

GitHub Branch Monitoring



What is Automation?

- Using tools to perform repetitive tasks automatically
- Key benefits: Speed, accuracy, less human effort
- Examples in software development (CI/CD, auto-merge, testing, notifications)

What is AI Agents ?

- An AI agent is a smart program that can understand what's happening around it, make decisions on its own, and do things to reach a goal – sometimes learning and improving over time.
- Key benefits:
 1. Responds to dynamic environments.
 2. Soon they'll do all my work while I chill in Goa living my best lazy life.
- Example : Customer support bots

GitHub Merge Agent Overview

- Purpose: Automate branch comparison and monitoring across environments.
- Frontend UI (user input):
 - GitHub repository owner/name
 - GitHub Fine grained Access Token (PAT)
 - Array of base branches (e.g., ["dev", "stage", "uat", "prod"])
 - Compare branch (optional)
- Behavior:
 - If compare branch is given → compare it with all base branches
 - If not → fetch all branches and compare each with base branches

Merge Monitoring & Time-Based Alerts

Include:

- Checks if branches remain unmerged after:
- 1, 2, 5, 10, 20 days
- Sends time-based alerts to remind action (**To mail and slack**)
- Keeps codebase healthy and updated
- Logic built on GitHub commit & PR metadata

Code Optimization , Suggestions & Security Concerns

Includes:

- AI-powered improvement tips included in alerts:
 - Clean unused code
 - Potential Bugs
 - Follow best practices (naming, structure, logic)
 - Security Concerns
- Helps team write cleaner code without manual reviews

Future Plans – Auto PR Creation

Include:

- If a branch merges into any one base branch (like dev)
- System automatically creates PRs from it to remaining base branches (stage, qa, prod)
- Reduces manual PR creation
- Keeps environments in sync
- Easy rollback or promote across stages