



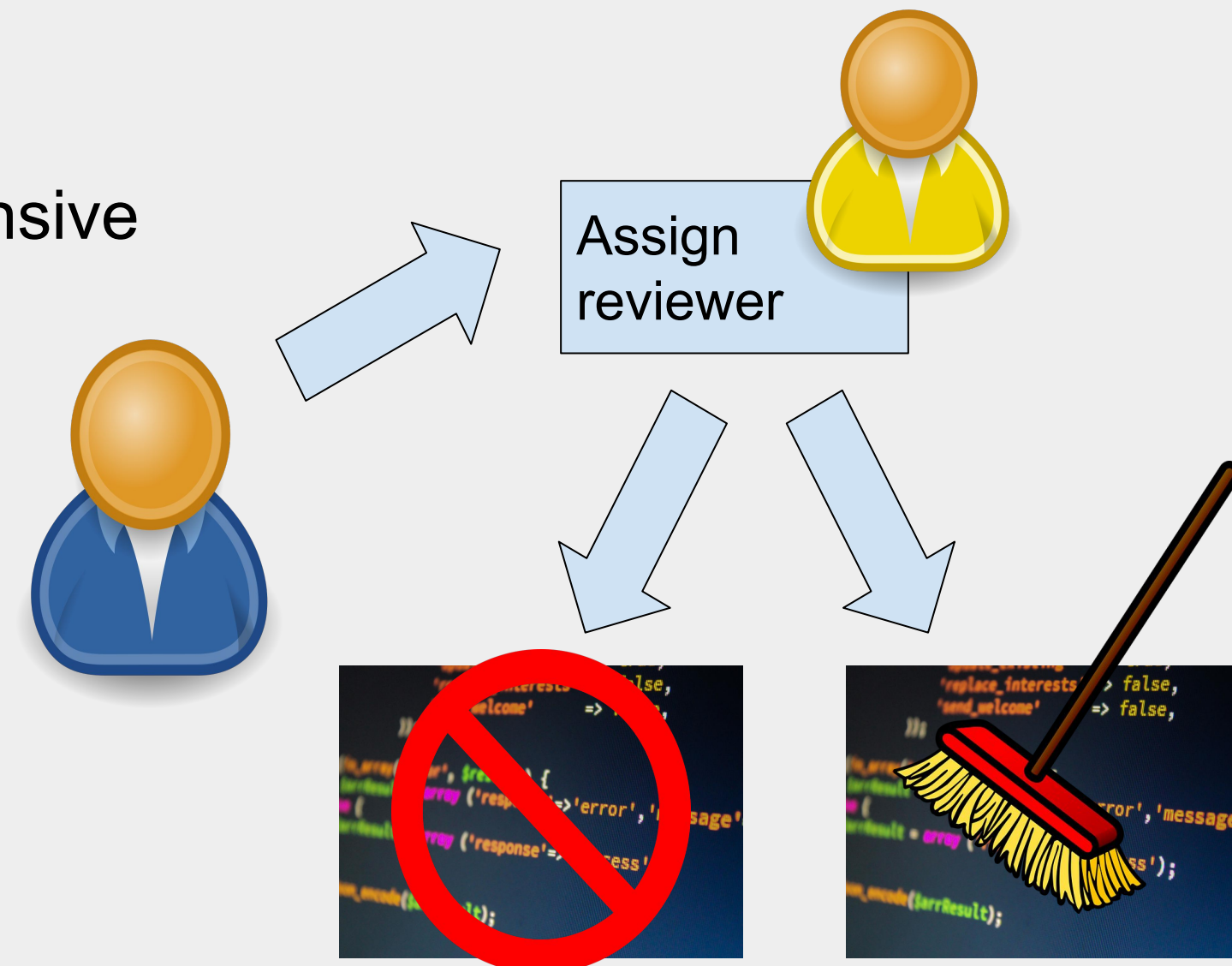
Optimus: A Software Bot For Automated Code Review

⁺Akhil Chinnakotla, ⁺Connor Chadwick, ⁺Noah Curran, ⁺Stephen Davis, ⁺Ryan Chen, ⁺Vishnu Banna, ⁺Jack Lecroy, ⁺Ryan Firestone, ⁺Ved Dave, ⁺Seyoung Lee, ⁺Dr. Yung-Hsiang Lu, [^]Dr. George K. Thiruvathukal
⁺Purdue University, [^]Loyola University Chicago, CS



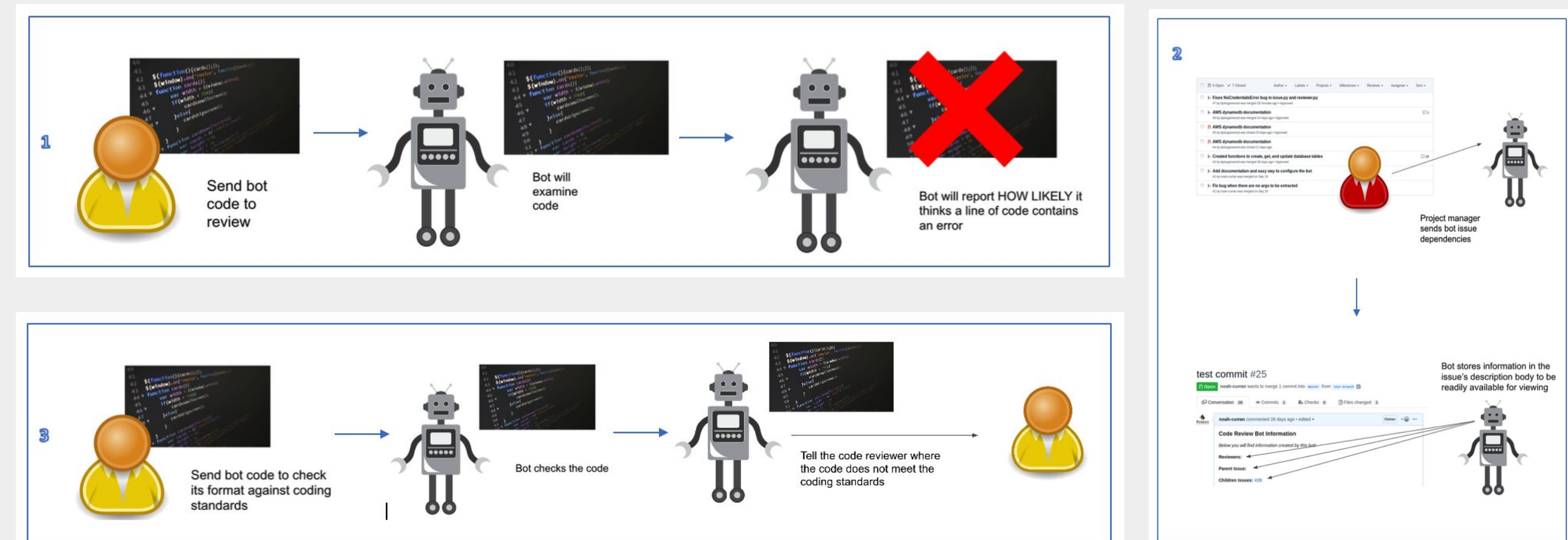
The Current State of Code Review

- Code review is highly repetitive and time intensive
 - Ensuring code is properly formatted
 - Determining suitable reviewers
 - Locating common bugs
 - Keeping track of bugs that are dependent of other bugs
 - Keeping track of the common bugs that developers make



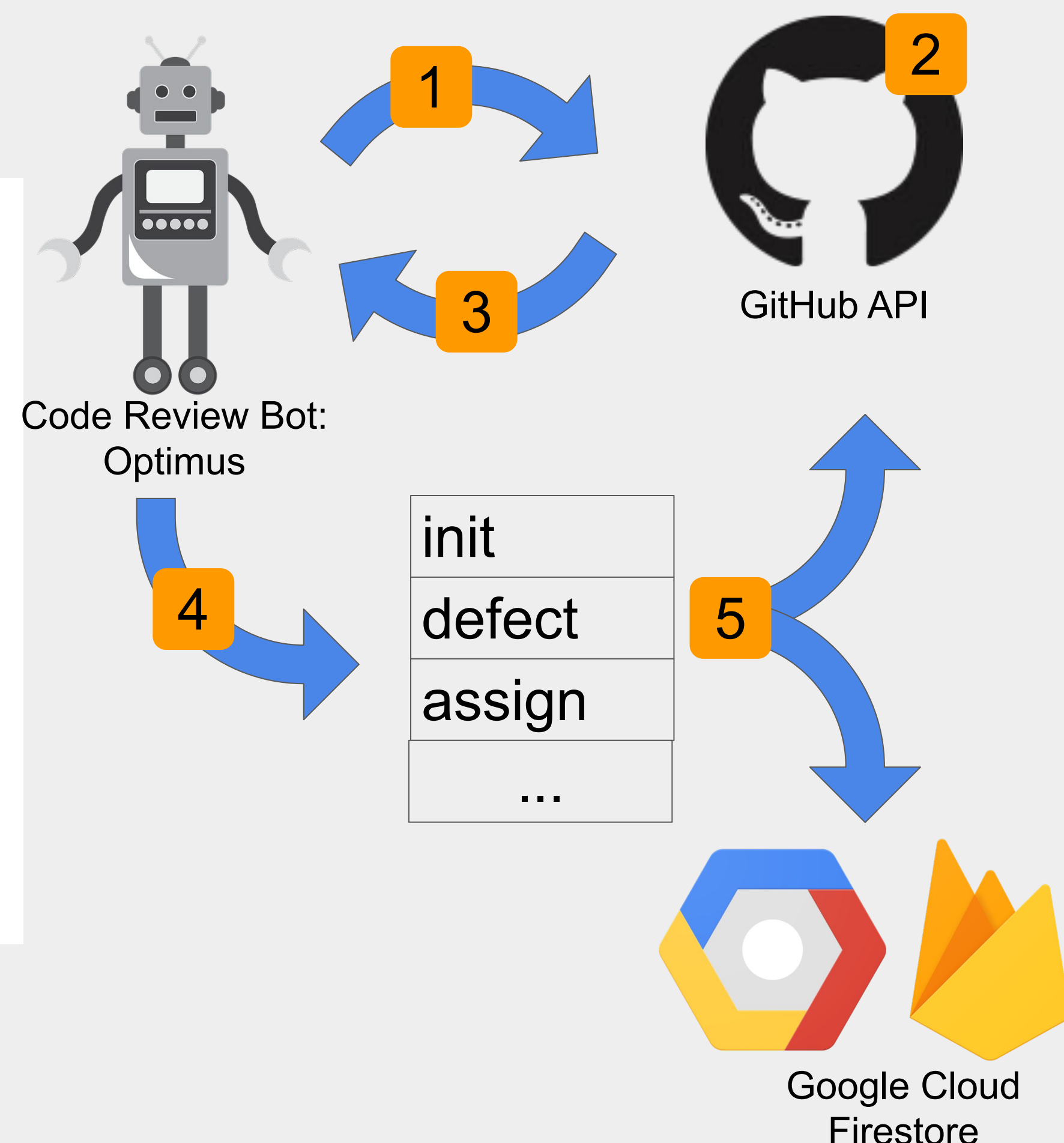
How Can We Save Time During Code Review?

- Catch defects faster to save code reviewer time while looking through code
- Keep important code review information readily available
- Check code against coding standards so code reviewer does not need to download code locally



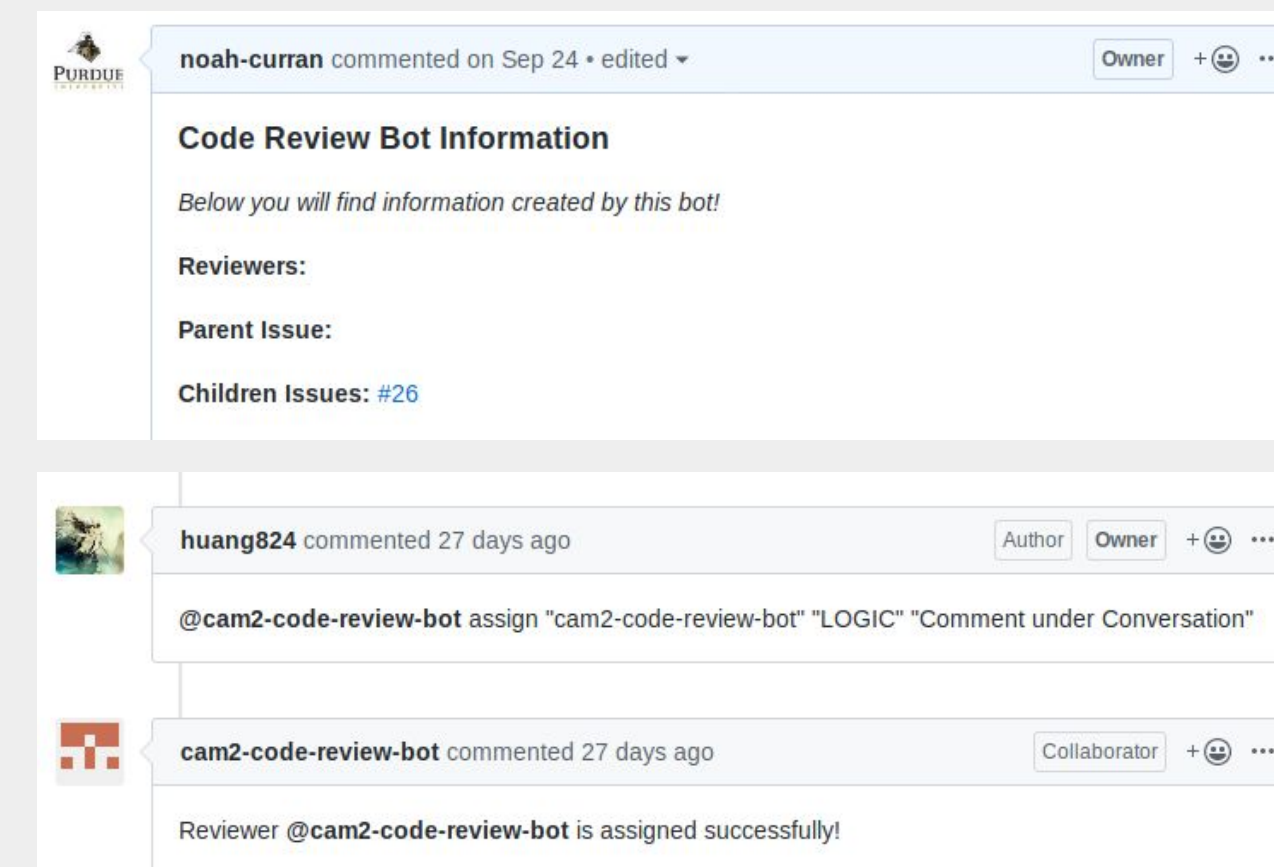
The Data Flow of Optimus

- 1 Optimus runs on serverless architecture, waiting for the GitHub API to send a request
- 2 GitHub API sends a payload to Optimus when event triggers
- 3 Optimus receives the payload, which contains the command
- 4 Determines which command to execute and parses arguments
- 5 Depending on the command, Optimus will post a message to GitHub using the GitHub API or store data using Google Firestore



Early Results and Future Work

- Optimus can now process commands and execute them on a GitHub repository. Commands include linting, identification of dead, redundant, or logically defected code, user and issue dependency management system, as well as a defect data collection.



- Next step is to develop a dataset of defected python code to test the implemented commands as well train an error ranking system and false positive detection.
- After this, Optimus will then be made ready for public release which will require the development of a website, a graphical user interface as well as a tutorial video.

huang824 commented 27 days ago • edited by cam2-code-review-bot			
Reviewers:			
Status	Reviewer	Role	Description
✓	@zbszd04160408	LOGIC	Top Comment update
✓	@zbszd04160408	LOGIC	Top Comment update status
✓	@zbszd04160408	LOGIC	Top Comment update status
✗	@zbszd04160408	LOGIC	Test 1
✗	@cam2-code-review-bot	LOGIC	Test 2
✗	@zbszd04160408	LOGIC	Test 3
Parent Issue:			
Child Issue:			