CrowdCode: A Platform for Crowd Development

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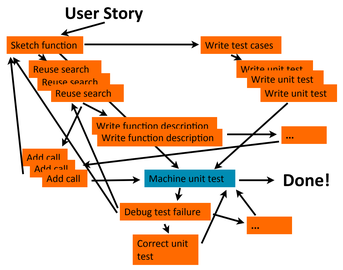
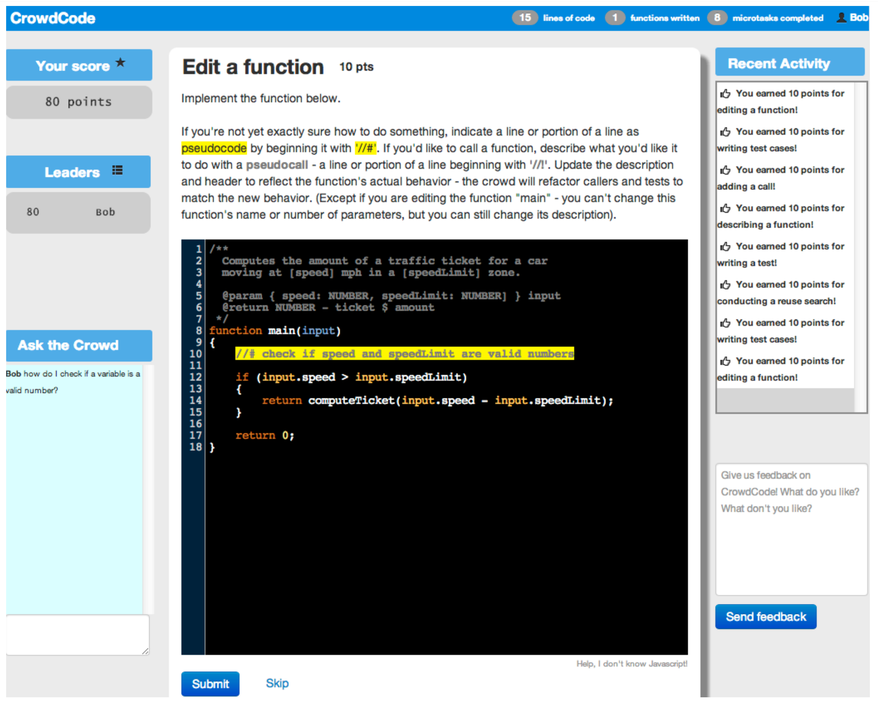
CrowdCode

Build software with a crowd!

CrowdCode organizes work into **microtasks**, small, self-describing bits like writing psuedocode or brainstorming test cases. After you finish a microtask, CrowdCode figures out what to do next, generating and distributing microtasks to the **crowd**. So you might write a description for function one, debug a test failure for another, and then edit the pseudocode the crowd wrote for function one to add a call. As you complete microtasks, you earn **points**, and can see how you're doing on the leaderboard.



Let's get started!



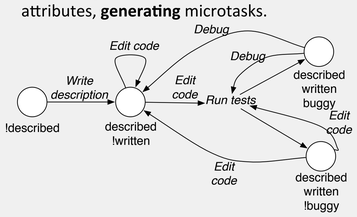
Key Simplifications

- Work begins with a set of **user stories** (scenarios) specified by a **client** which do not change.
  - Each user story can be tested by a set of tests of a main() function.
- Functions are completely specified by their **inputs and outputs**. (e.g., a library)
  - Functions do not mutate global state or interact with environment (e.g., write output).
  - All bugs can be detected through unit tests.
- Programs are written in a (basic subset of) Javascript (e.g., no callbacks).
- Programming tasks are to **implement** a feature, **fix** a bug, or write **tests**.
- All **design** is done locally and iteratively (e.g., through refactoring).
- Workers are **motivated** by pay or reputation and **not malicious**.

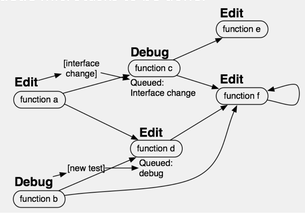
==> crowdsourcing the programming of functional Javascript libraries

Generating Microtasks

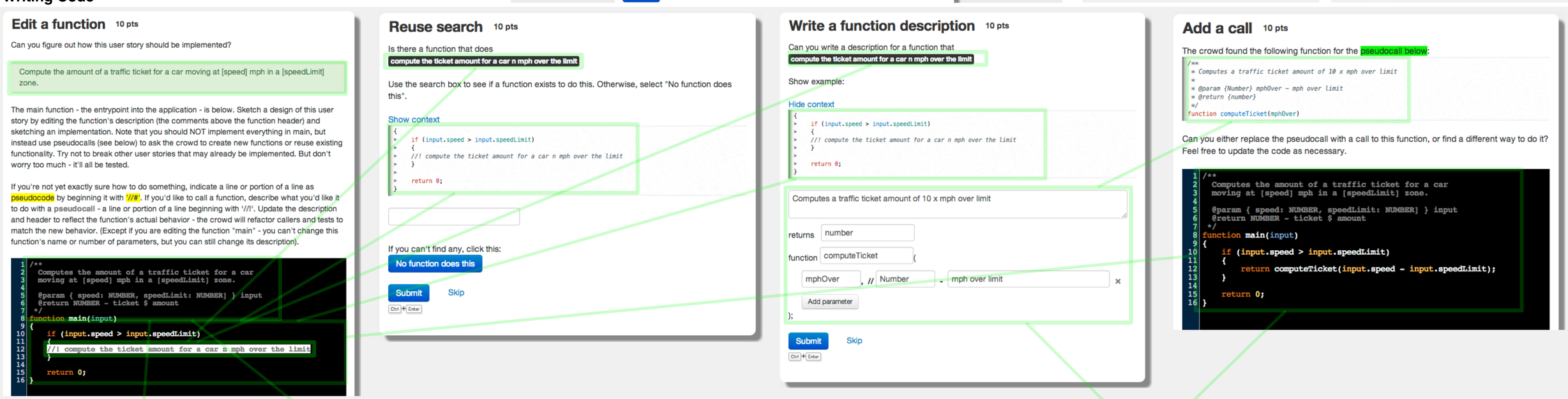
- Each function has **attributes** describing its state. Submitting a microtask may change a function's attributes, **generating** microtasks.



- Only **one** microtask may be active per artifact, preventing merge conflicts. Events propagate **changes** (signature, tests) across **dependencies** between artifacts (functions, tests). Microtasks may "check out" a readonly copy of global interfaces, but may only commit a change to a single artifact. Events received on an artifact **queue** microtasks to be done.



Writing Code



Testing & Debugging