Modeling in the Open
Best Practices and Lessons Learned for Development of VisionEval

An Open Source Strategic Planning Project

visioneval.org

Innovations in Travel Modeling Conference

2018-06-25

Summary

- Open source overview

- Development Process / Governance

- Licenses

- Community Engagement

Open Source Overview

- Public agencies moving to an open source approach.

- government.github.com

- Department of Defense, NASA, Consumer Financial Protection Bureau, National Park Service
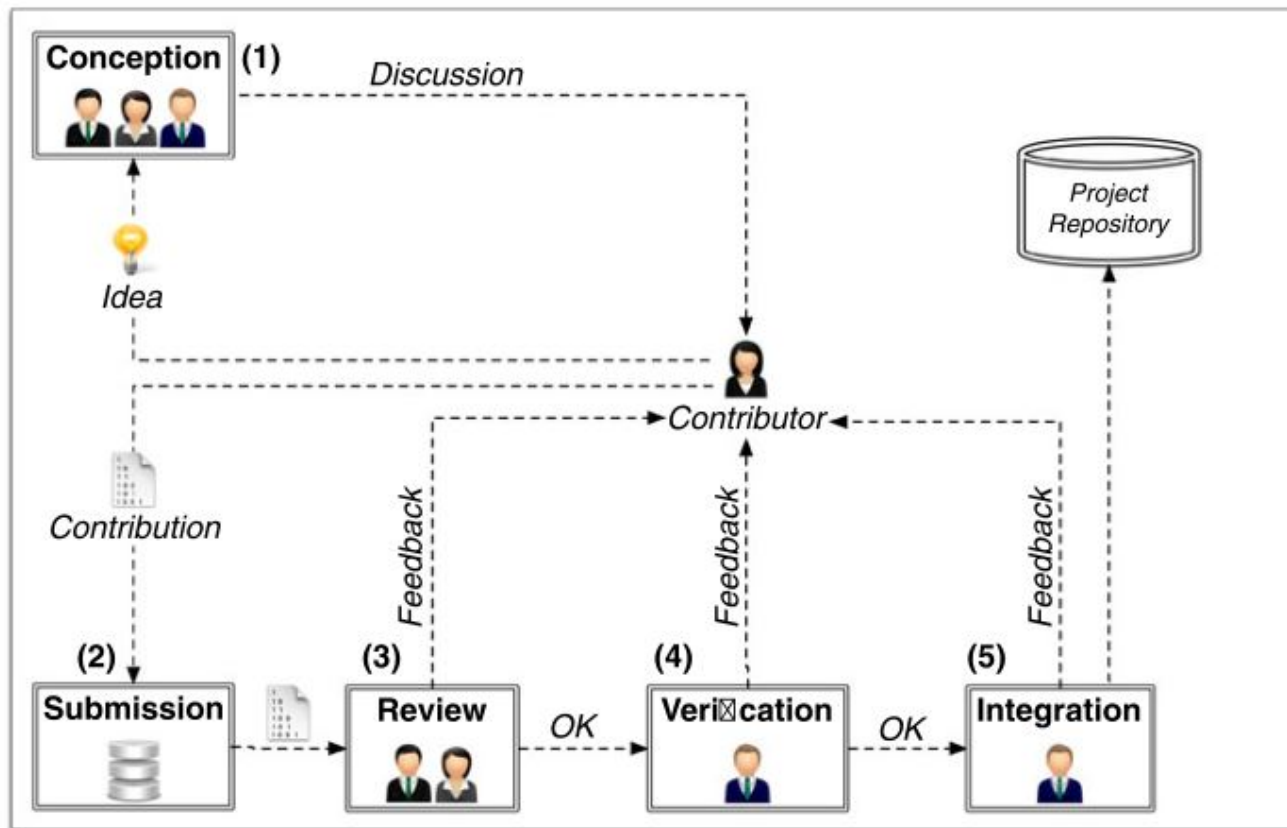
Open Source Overview
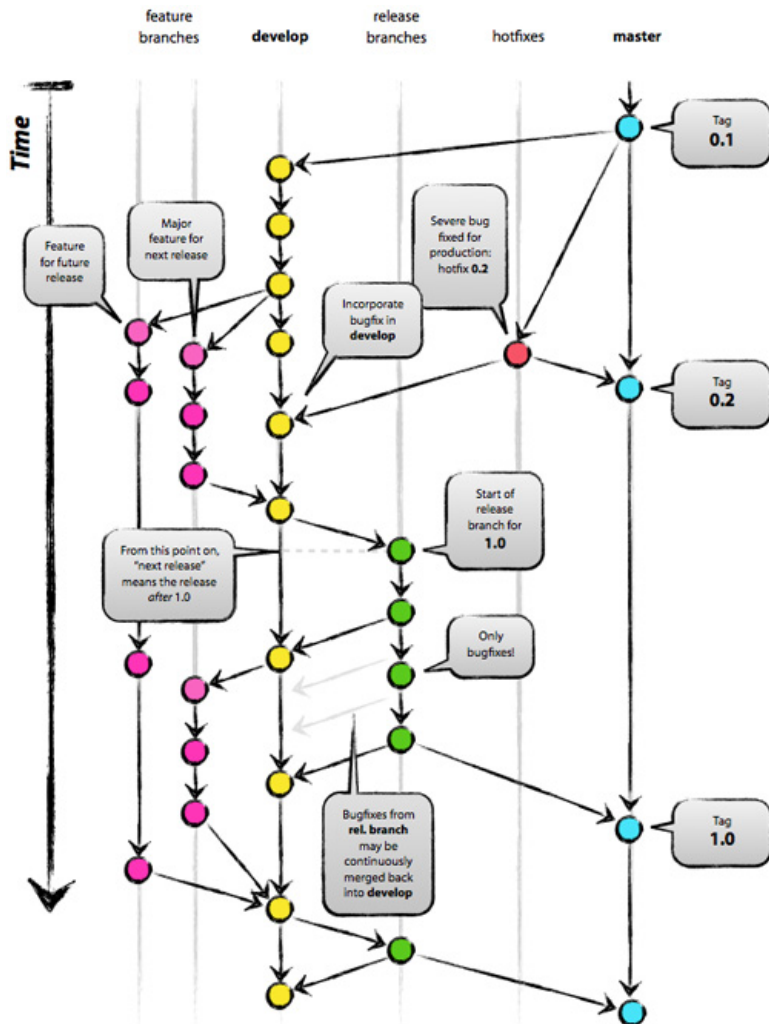
Ideal for projects supported by public agencies.

- **Transparency:** code readily available to the community of users.

- **Cost-effectiveness:** builds on common tools, share modules

- **Longevity:** community effort, not tied to single developer

Development Process

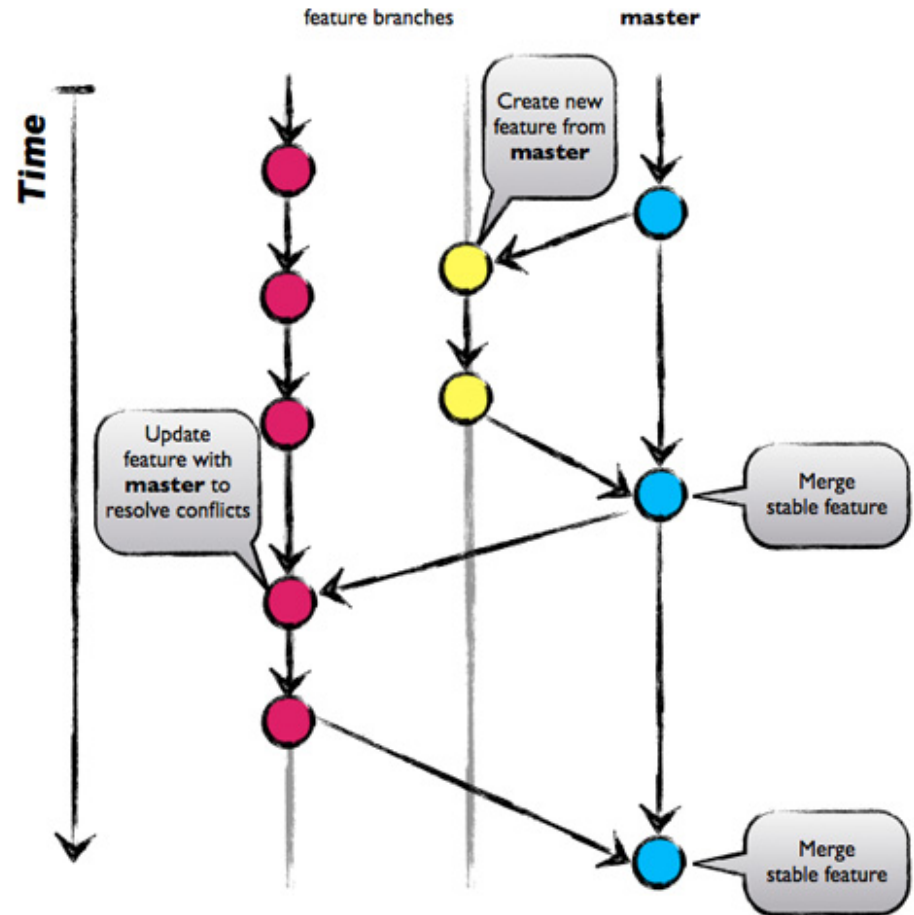Tied to governance, since need to clearly specify authority for review of code
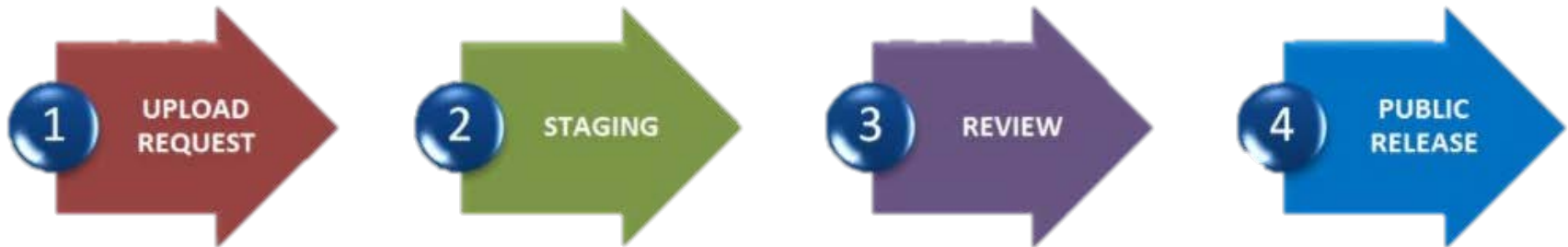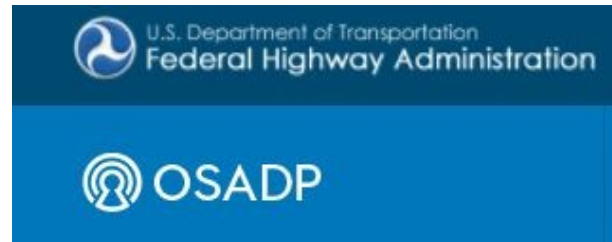
Development Process

- Stable master

- Active development branch with frequent commits

- Periodic releases

GitHub for Code Review

- **Issues** to initiate discussion of new features

- **Pull Requests** to propose code for review. Iterative process, merge to dev.

- **Wiki** can help organize priority features for development

Code Review Example: OSADP

U.S. Department of Transportation
Federal Highway Administration

OSADP

1 UPLOAD REQUEST → **2** STAGING → **3** REVIEW → **4** PUBLIC RELEASE

- Funded by USDOT Intelligent Transportation Systems – Dynamic Mobility Applications program

- **Upload** access request form. Review by OSADP administrator

- **Staging** to private GitHub repository

Code Review Example: OSADP
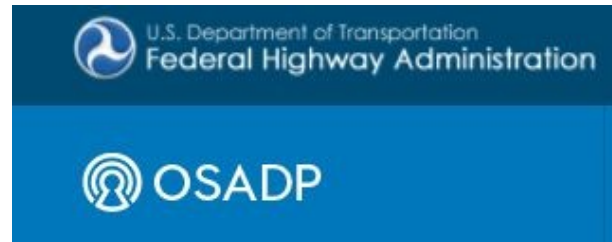
- **Review** by OSADP staff, following release checklist
- **Public Release** on itsforge.net
- **Collaboration** only by designated project members on private GitHub repository

Code Review Example: ActivitySim

- **Users** use the modeling tool

- **Developers** contribute code / documentation

- **Committers** review code, designated by PMC

- **Project Management Committee (PMC)** composed of funders, provide oversight. PMC Contractor crucial.

- **Funders** may be part of PMC

Licenses

Choose an open source license

{ **Which of the following best describes your situation?** }

I want it simple and permissive.

The **MIT License** is a permissive license that is short and to the point. It lets people do anything they want with your code as long as they provide attribution back to you and don't hold you liable.

jQuery, **.NET Core**, and **Rails** use the MIT License.

I'm concerned about patents.

The **Apache License 2.0** is a permissive license similar to the MIT License, but also provides an express grant of patent rights from contributors to users.

Android, **Apache**, and **Swift** use the Apache License 2.0.

I care about sharing improvements.

The **GNU GPLv3** is a copyleft license that requires anyone who distributes your code or a derivative work to make the source available under the same terms, and also provides an express grant of patent rights from contributors to users.

Bash, **GIMP**, and **Privacy Badger** use the GNU GPLv3.

Contributor License Agreements (CLA)

- "Intellectual Property Assignment Agreement"
- States you are entitled to contribute code/documentation, willing for it to be used in distributions and derivative work
- Cannot withdraw permission
- Requires recordkeeping and maintenance of agreements
- May be more burdensome than needed for VisionEval

CLAHub

Contributor License Agreements on GitHub

Easily add a Contributor License Agreement to your GitHub project, let contributors sign it, and see at a glance which pull request authors have signed your CLA, and which haven't.

Community Engagement

Discussion forums

Community Engagement

Issues page

Summary

- **Engage** the community with clear wiki, active issues page, consider discussion board

- Develop **governance structure** which establishes the roles and responsibilities of users, developers, and collaborators/committers, as well as an oversight body composed of funders.

- Develop **code review** process which is clear, fair, and public

- Clearly **document** tools, provide guidance for developers

- Agree on a **license** which meets the needs of the project

Thank You

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