Google's Single Repository
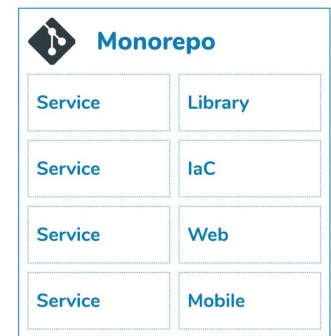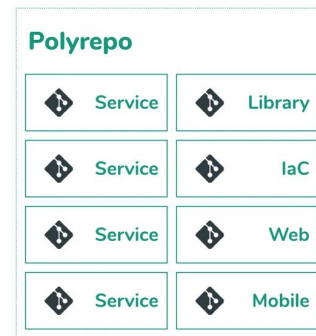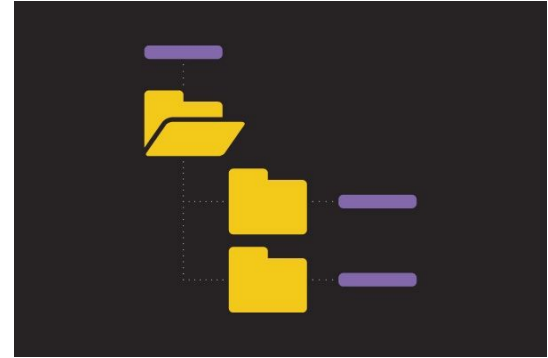
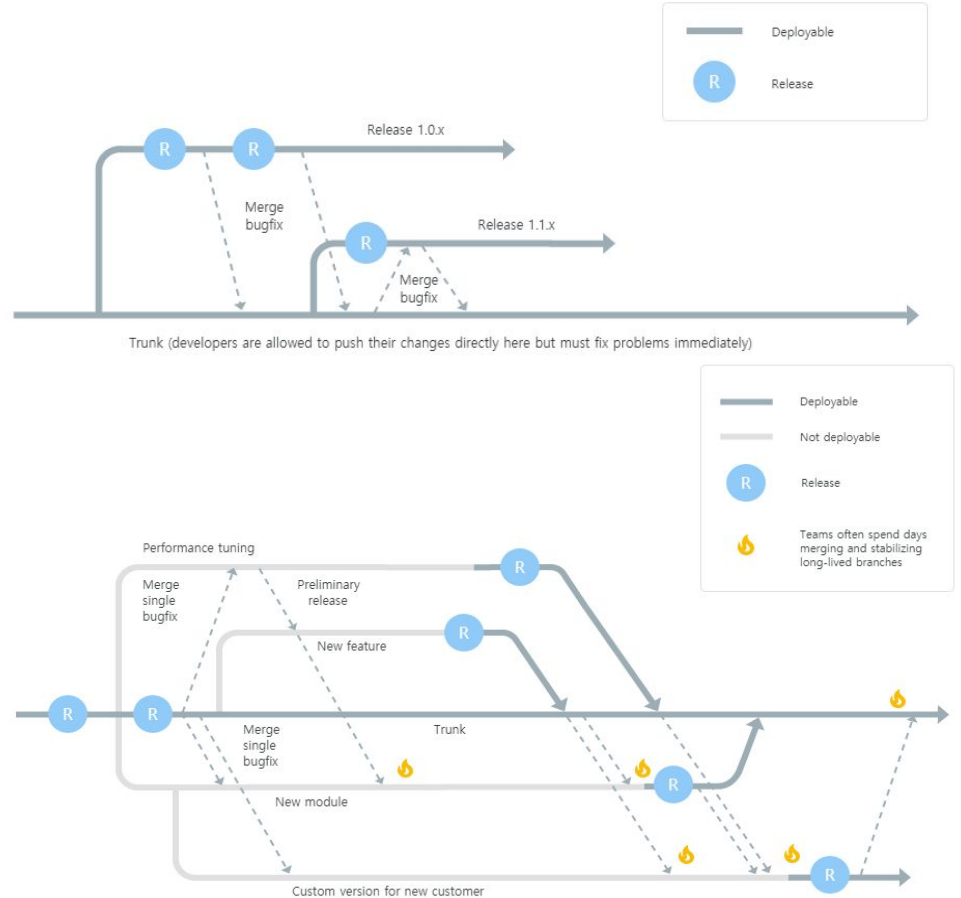Zachary Crews, Inhan Park, Ayush Ganotra, Gabbie Velazquez-Pergola

What a Single Repository is:

- Also known as Monorepo

- A means of storing assets and maintaining a codebase.

- All projects created would depend and be built on top of a single codebase.

- Unified Versioning

- Features include: useful, enormous libraries, tons of code for reuse, and custom versioning and control.

Polyrepo	
Service	Library
Service	IaC
Service	Web
Service	Mobile

Monorepo	
Service	Library
Service	IaC
Service	Web
Service	Mobile

How does it work :

- Piper / Citc source system
    - Allow to access from any machine
    - Work on local copied file
    - Keep receive updates from server
    - Update to server after receive review
- Trunk based development
    - Prevent long-lived branch
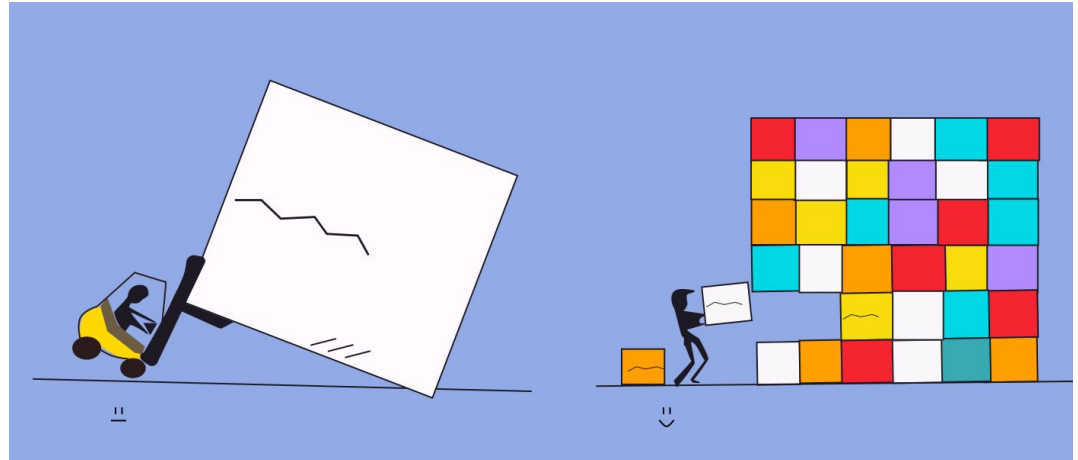   - Make changes visible immediately

Why Google chose this way (background) :

-   Unified Version of Code
-   Extensive Code Sharing and Reuse
-   Collaboration Across Teams
-   Flexible Team Boundaries
-   Code Visibility

Costs and Tradeoffs

- Tooling needs to be very scalable
- Cost of systems and developer tools
- Increased dependencies
- Less APIs
- Less documentation

Alternatives: Mercurial

- Google is currently investigating using Mercurial, a version control system
- Facebook monorepo with Mercurial
- hgwatchman file monitor extension
  - File status
- remotefilelog extension
  - File history and updates
  - Only download commit metadata
  - On demand file download

Discussion Questions

- As a developer, would you prefer working with a monorepo or multiple repos?

- Can a monorepo be continued if more codes are added?

- Can a Single repo be changed into a multi repo?

Sources

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