



APSSDC

Andhra Pradesh State Skill Development Corporation



VERSION CONTROL SYSTEM

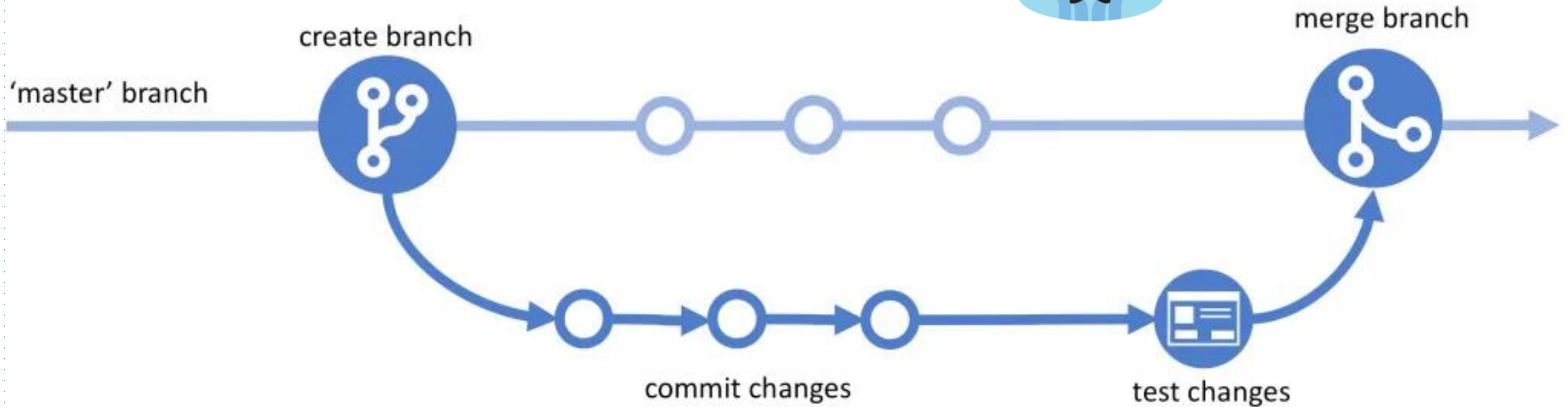


git

Git And GitHub



GitHub



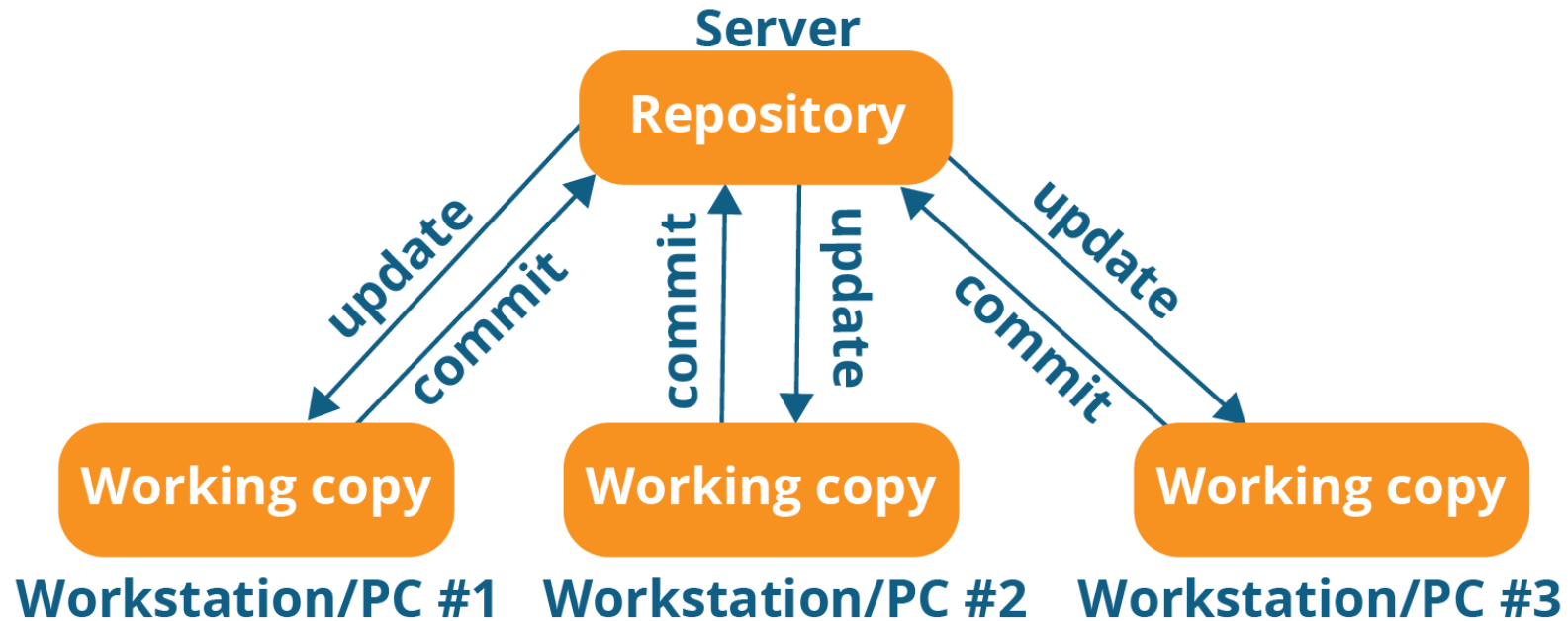


Few Problems

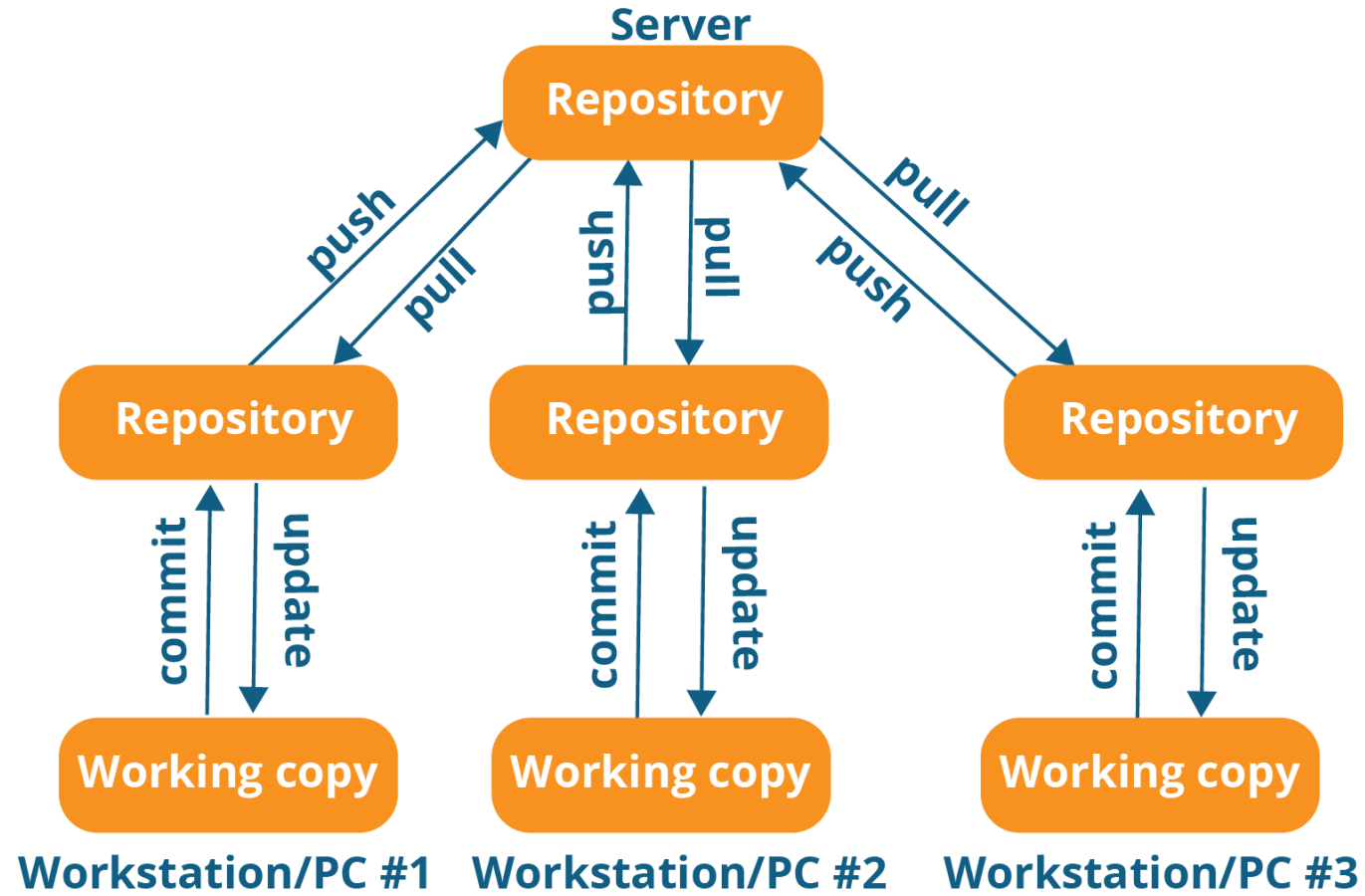
- For creating x application y developers are working on z no of different machines for w days
- Signal app 7 devs for 365 days
 - Today 1000 lines of code got the expected output
 - Tomorrow 100 lines of code on different locations of yesterdays code but I'm not any output
 - Maintain different of code -> 365 Copies
 - Memory Storage
 - Complicated to track the change of code
 - D dev mistakenly deleted a file
- Time machine → Version Control System

Types of Version Control Systems

Centralized version control system



Distributed version control system



Git

Distributed Revision Control and Source Code Management (SCM)

Created by Linus Torvalds, creator of Linux, in 2005

- Came out of Linux development community
- Designed to do version control on Linux kernel

Goals of Git:

- Speed
- Support for non-linear development (thousands of parallel branches)
- Fully distributed
- Able to handle large projects efficiently





Version control systems

- **Version control** (or **revision control**, or **source control**) is all about managing multiple versions of documents, programs, web sites, etc.
 - Almost all “real” projects use some kind of version control
 - Essential for team projects, but also very useful for individual projects
- Some well-known version control systems are CVS, Subversion, Mercurial, and Git
 - CVS and Subversion use a “central” repository; users “check out” files, work on them, and “check them in”
 - Mercurial and Git treat all repositories as equal
- Distributed systems like Mercurial and Git are newer and are gradually replacing centralized systems like CVS and Subversion



Why version control?

- For working by yourself:
 - Gives you a “time machine” for going back to earlier versions
 - Gives you great support for different versions (standalone, web app, etc.) of the same basic project
- For working with others:
 - Greatly simplifies concurrent work, merging changes
- For getting an internship or job:
 - Any company with a clue uses some kind of version control
 - Companies without a clue are bad places to work



Why Git?

- Git has many advantages over earlier systems such as CVS and Subversion
 - More efficient, better workflow, etc.
 - See the literature for an extensive list of reasons
 - Of course, there are always those who disagree

Git as Version Control

Git Terminology

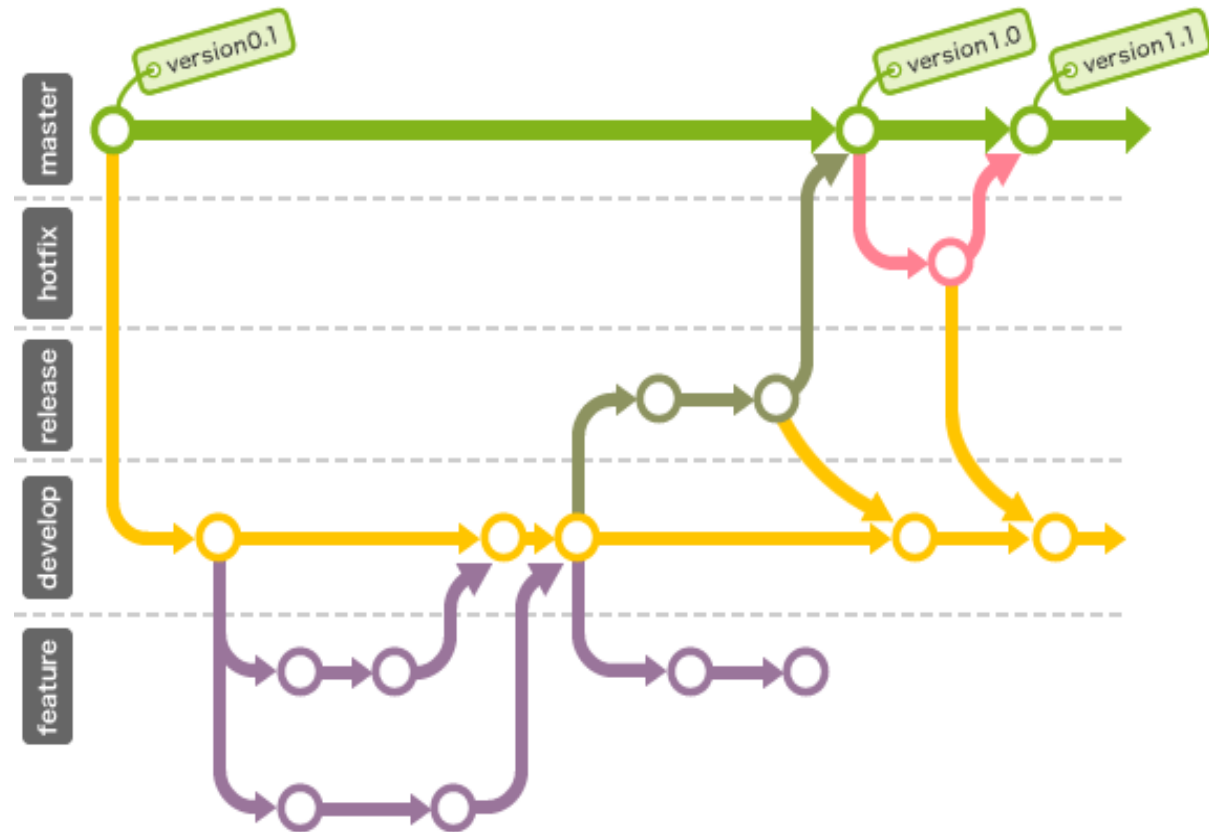
Repository - Your project directory

- Local
- Remote

Branch - A version of your repository

Commit - A checkpoint on a branch

Master Branch - The main branch of your software



Where is the Code?

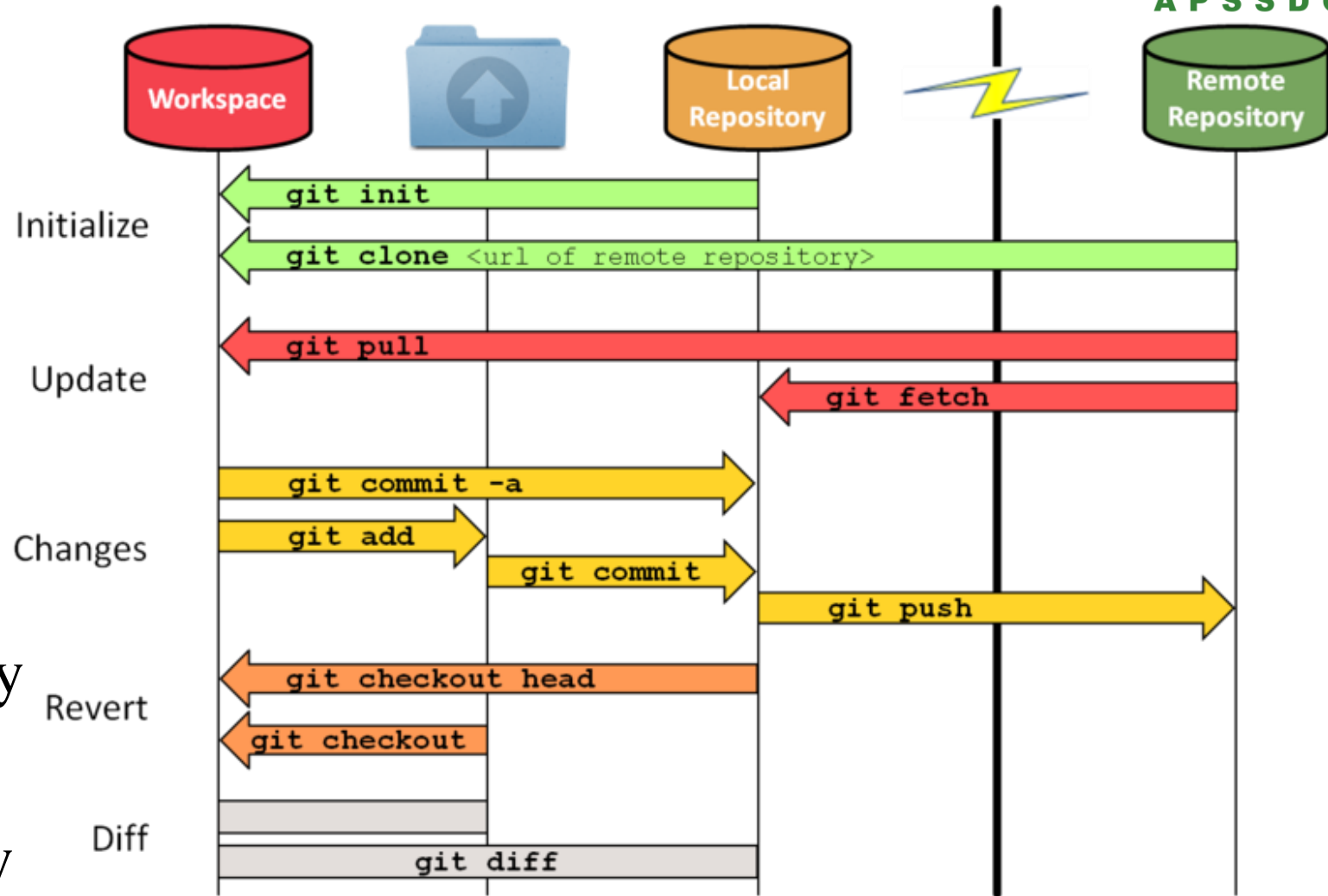
The Git process

1. Initialize a Repo

2. Write code

3. Commit to local repository

4. Push to Remote repository



GitHub

Tom Preston Werner (co-founder)

Werner is also the creator of Gravatar - the traveling profile image site



GitHub is now BIG - \$750 million big





Git & GitHub

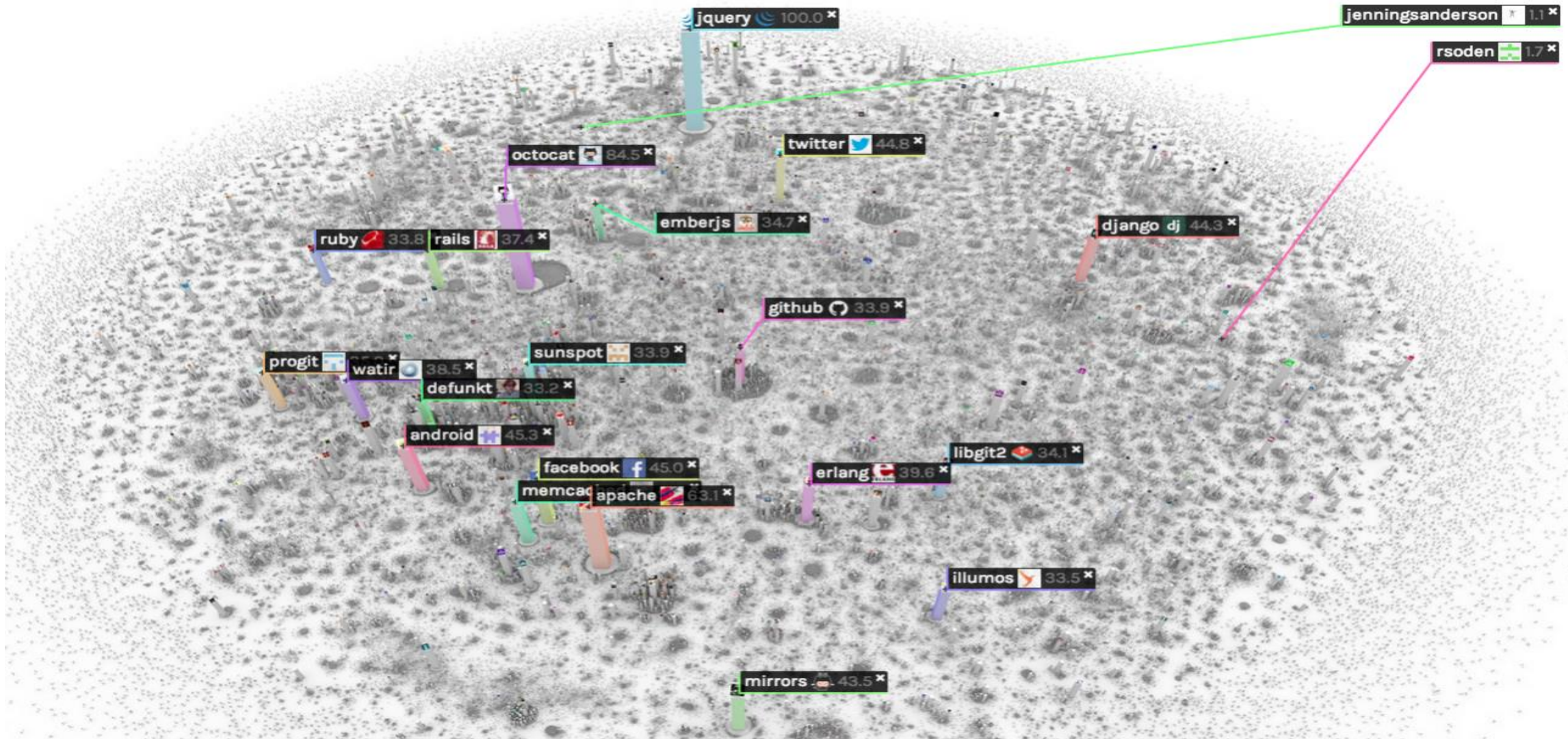
Are

- Free & Open
- Becoming Industry Standards
- Collaborative Tools

Are Not

- Code Editing Software (though Github provides limited functionality)

GitHub – Global Community





Projects

- Open Source:
 - Source code is open to all
 - Free to use no license required
 - Signal Application – blue color -> pink, brown
 - Secure
- Non – Open Source
 - Source code is not open to all
 - Few Free/paid to use no license required
 - Secure/ non secure



GitHub Commands

GitHub is a hub of remote git repositories

Forking – Making your own copy of the repository

Pull Request – Asking the repository owner to merge your changes



Download and install Git

- There are online materials that are better than any that I could provide
- Here's the standard one:
<http://git-scm.com/downloads>
- Here's one from StackExchange:
<http://stackoverflow.com/questions/315911/git-for-beginners-the-definitive-practical-guide#323764>

- Note: Git is primarily a command-line tool
- Prefer GUIs over command-line tools, but...
- The GIT GUIs are more trouble than they are worth