Software Engineering

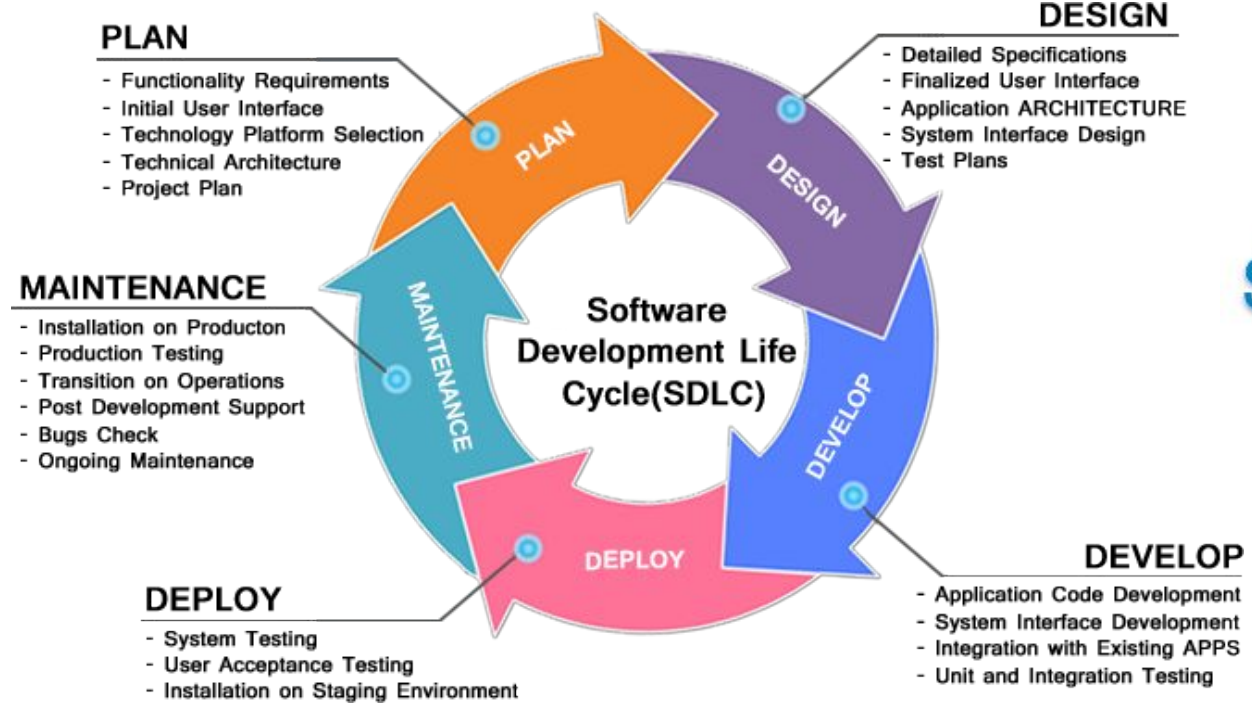
Plan

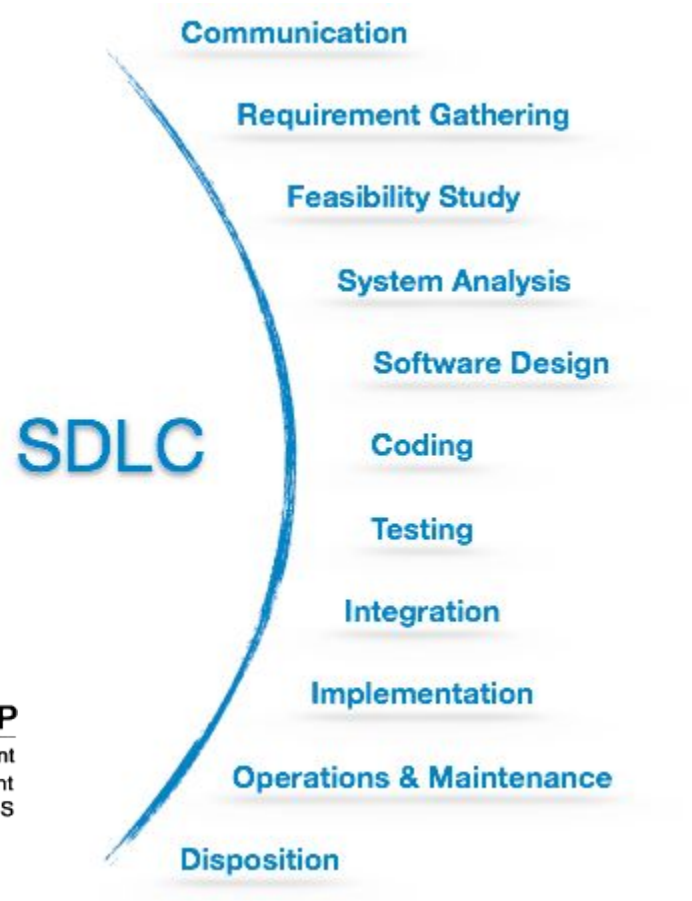
- Software Engineering
- Motivation
- Software Process Models
- Agile Methodology
- Scrum
- Github

1 Software Engineering

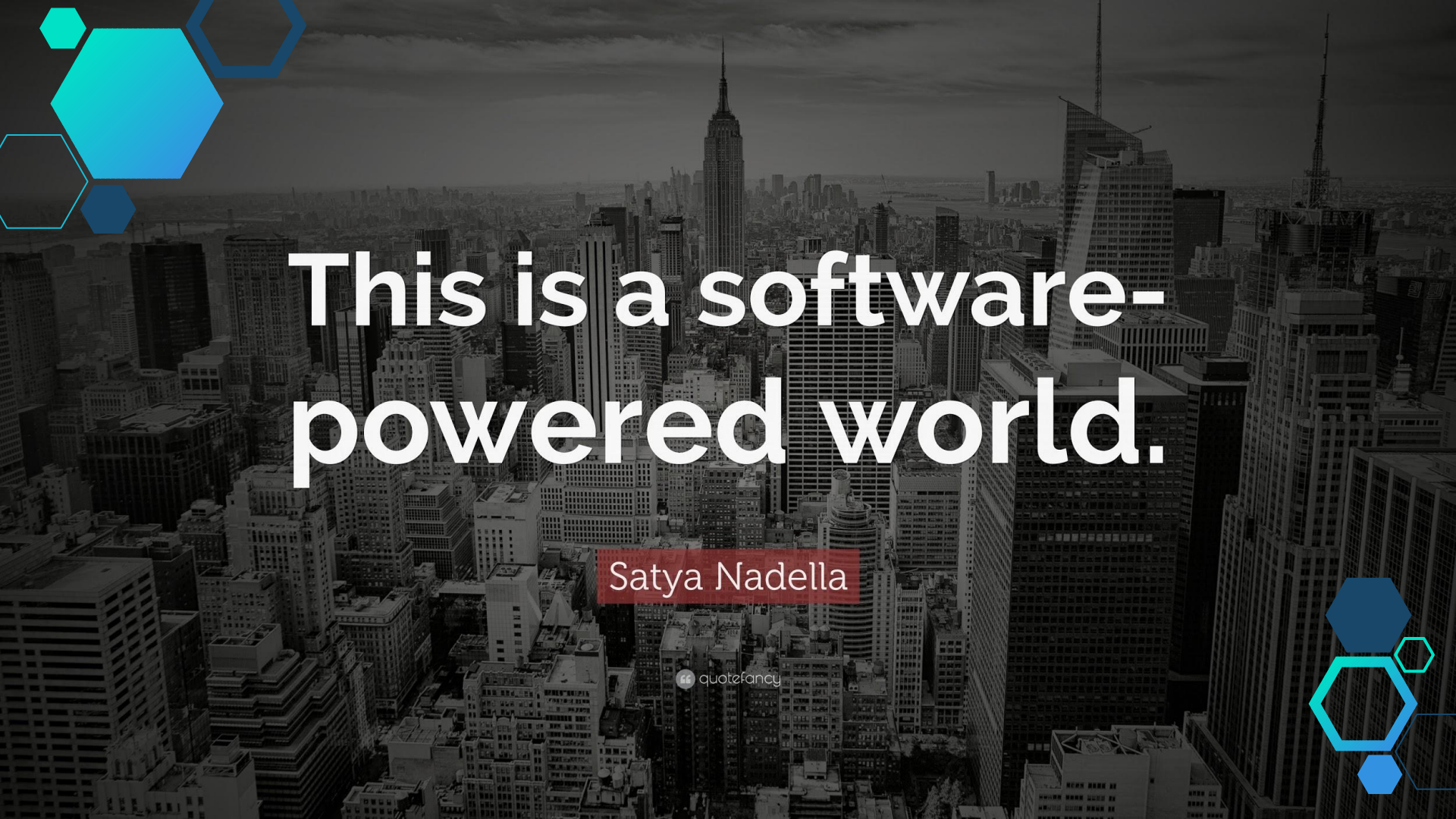
“Software engineering, is the process of analyzing the user’s needs. Then designing, constructing, and testing end user applications that satisfies those needs”

SDLC





2 Motivation

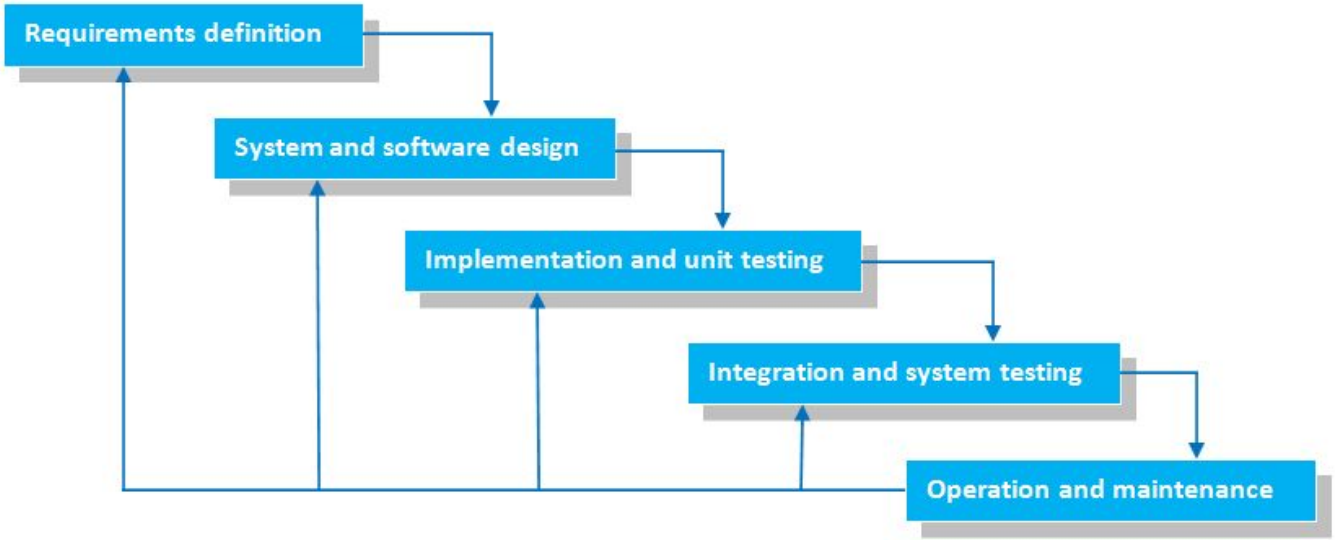

This is a software-powered world.
Satya Nadella
quotefancy

3

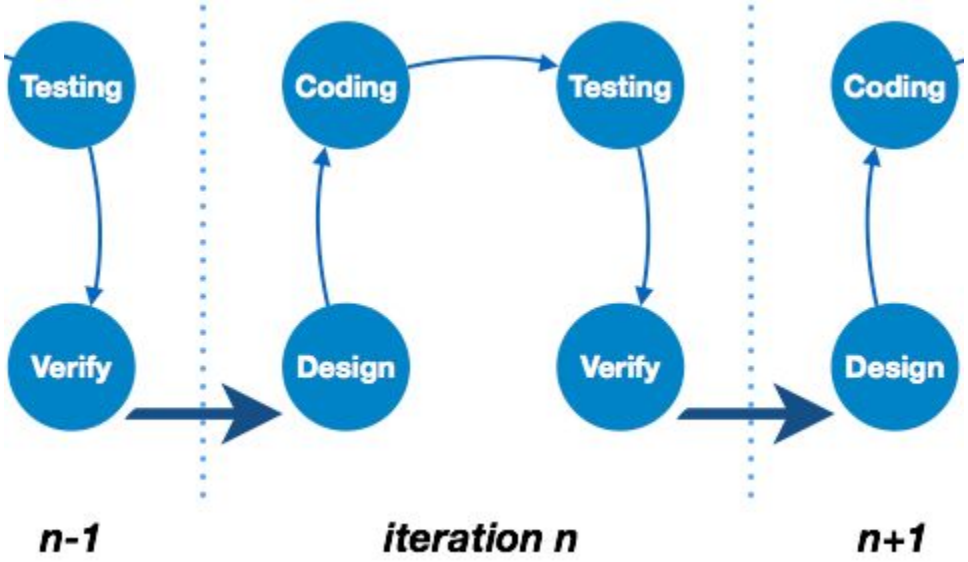
Software Process Models

“Software Process Model, is a set of tools, methods and procedures, which are expressed clearly and defines software development life cycle”

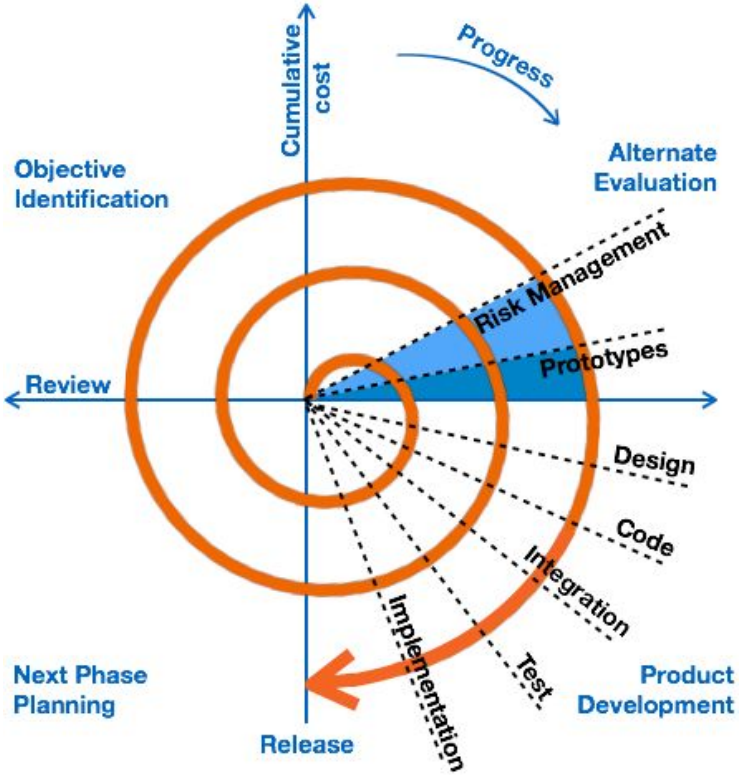
Waterfall



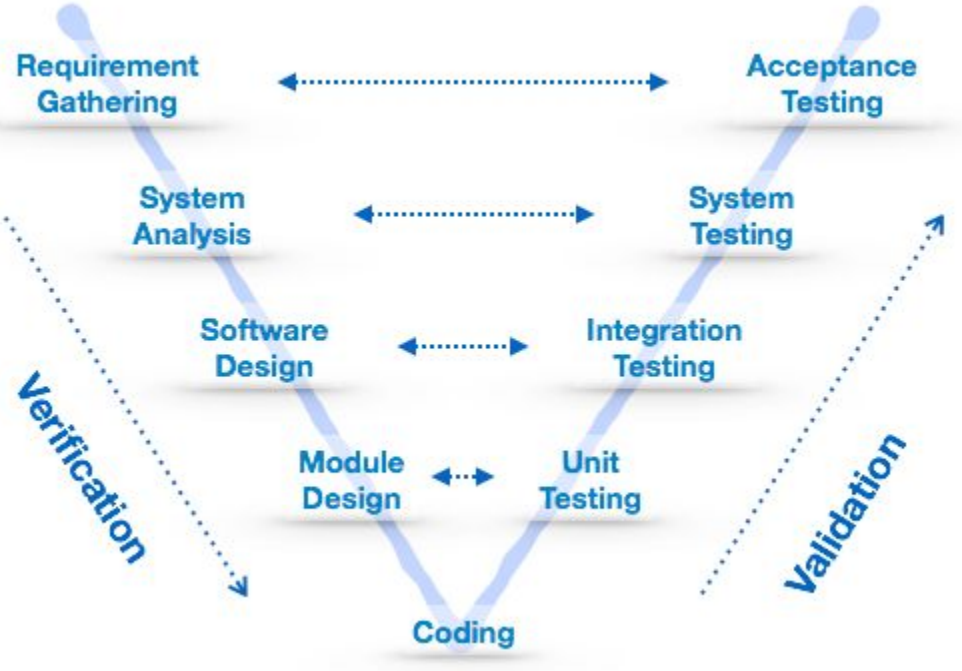
Iterative



Spiral



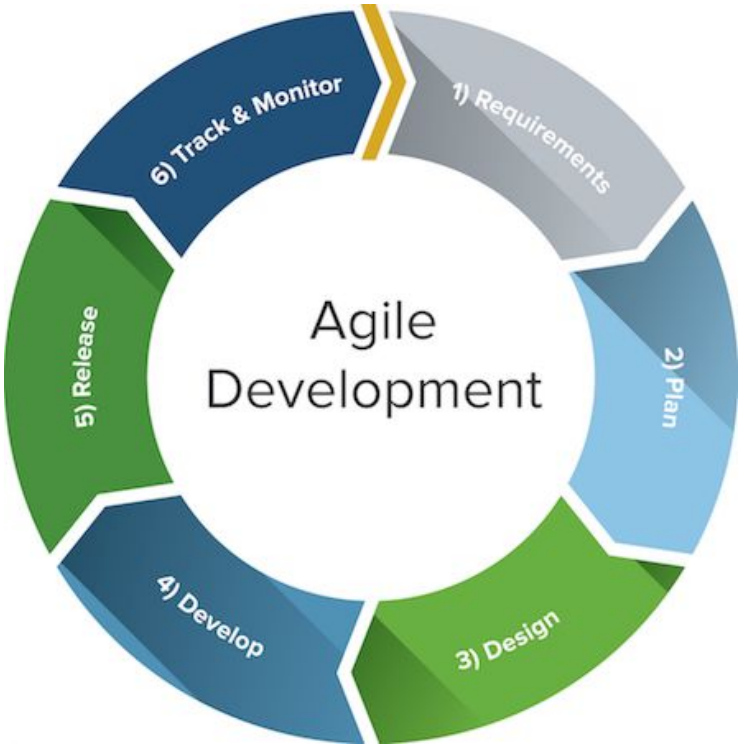
V


Requirement Gathering
Acceptance Testing
System Analysis
System Testing
Software Design
Integration Testing
Module Design
Unit Testing
Coding
Verification
Validation

Big Bang

4 Agile Methodology

Agile Development Cycle



Manifesto

Individuals & interactions

Working software

Customer collaboration

Responding to change

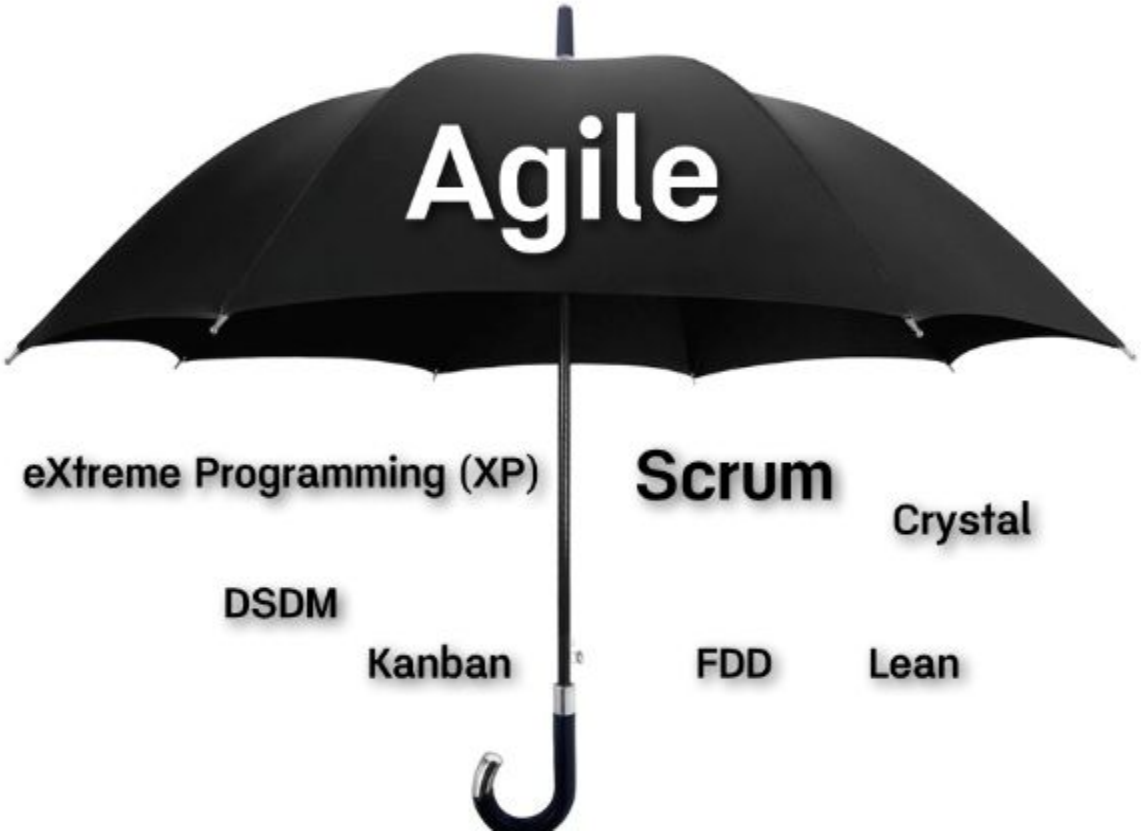
Processes & tools

Comprehensive documentation

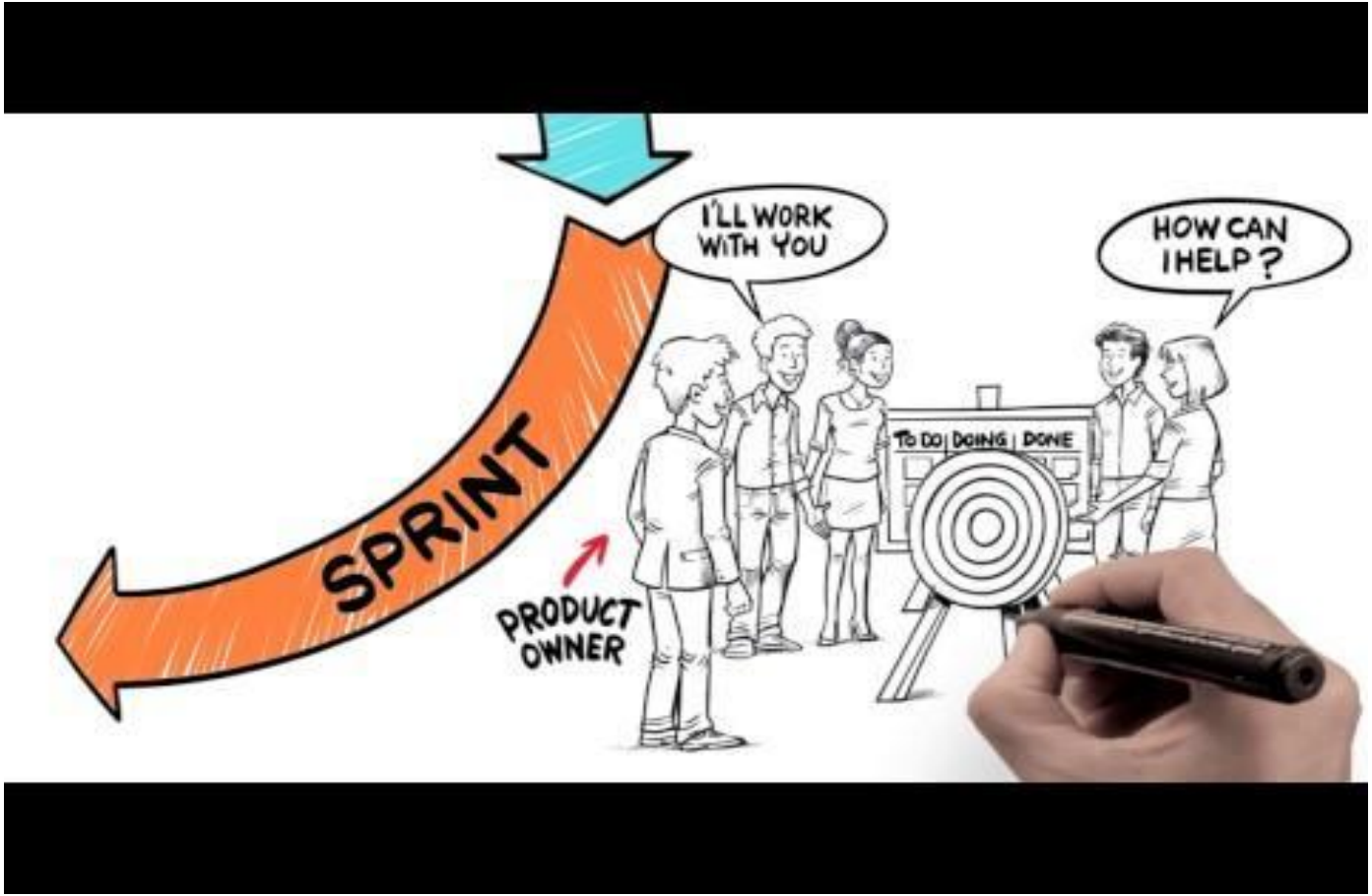
Contract negotiation

Following a plan

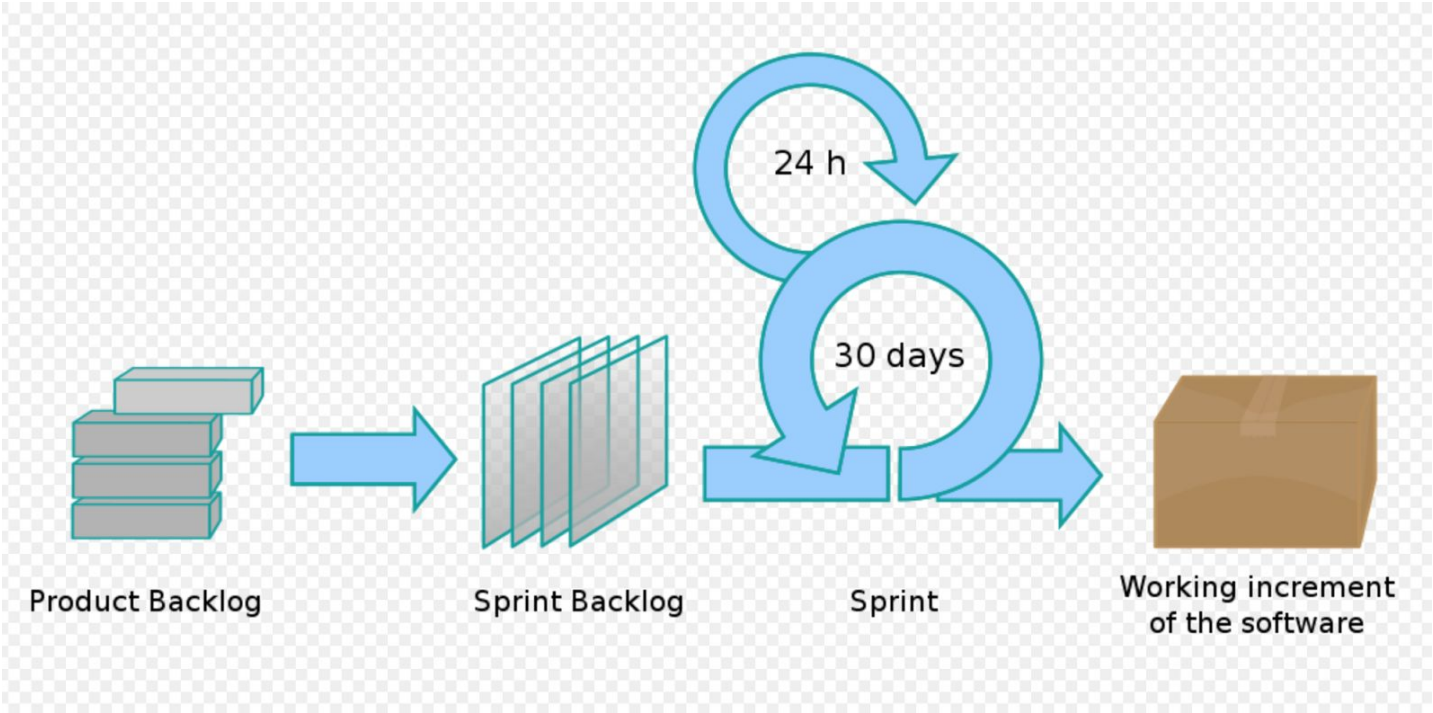
Methodologies



4 Scrum


I'LL WORK WITH YOU
HOW CAN I HELP?
SPRINT
PRODUCT OWNER
TO DO | DOING | DONE

Scrum Process



Scrum Process

Advantages

- More transparency and project visibility
- Increased team accountability
- Easy to accommodate changes
- Increased cost savings

Disadvantages

- Risk of scope creep
- Team requires experience and commitment
- The wrong Scrum Master can ruin everything
- Poorly defined tasks can lead to inaccuracies

Scrum Roles

Product Owner

Product owner's job is to motivate the team with goal and vision.

Product Owner focuses on business and market requirements, prioritizing all the work that needs to be done.

Scrum Master

The coach for the team.

Organizes meetings, dealing with roadblocks and challenges, and working with the Product Owner to ensure the product backlog is ready for the next sprint.

Doesn't have authority over the team members

Scrum Team

Comprised of five to seven members.

There are not distinct roles like programmer, designer, or tester.

Everyone completes the set of work together

Scrum Process Steps

Product backlog

Is a list of all the desired features for the product.

Sprint planning

Is a list of the top items on the backlog to complete in the sprint.

Backlog refinement/grooming

Is to ensure the backlog only contains items that are relevant and detailed, and that meet the project's objectives.

Daily Scrum meetings

Is a 15-minute stand-up meeting where each team member talks about their goals and any issues that have come up.

Sprint review meeting

At the end of each sprint, the team presents the work they have completed at a sprint review meeting.

Sprint retrospective meeting

At the end of each sprint, the team reflects on how well Scrum is working for them and talks about any changes that need to be made in the next sprint.

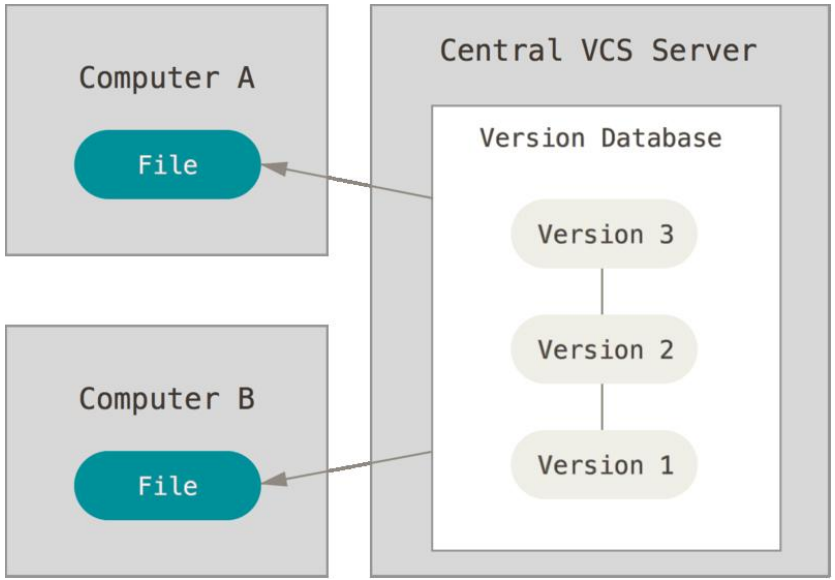
5 Github

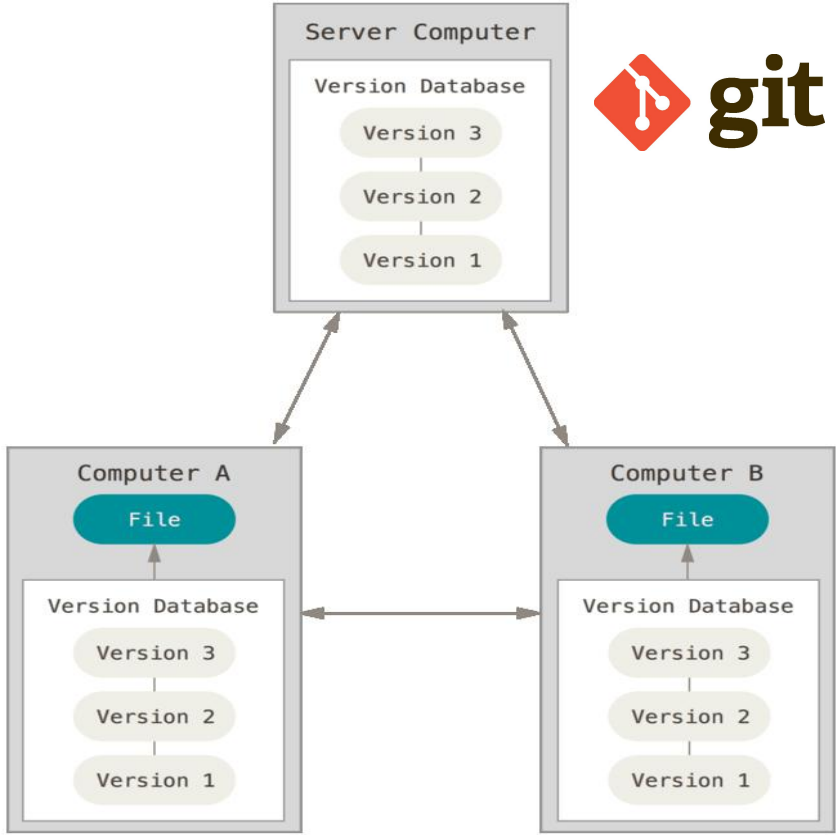
“GitHub is a Distributed Version Control System (DVCS).

It lets you and others work together on projects from anywhere”

“Version control systems are a category of software tools that help a software team manage changes to source code over time”

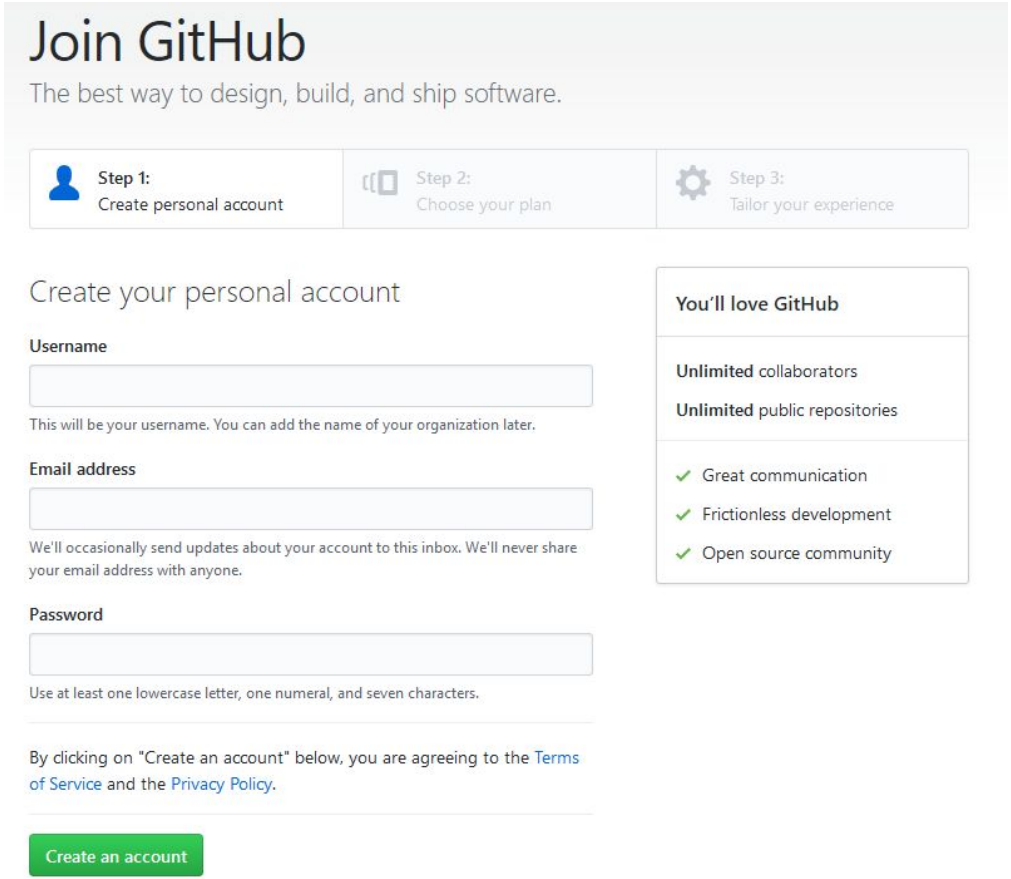
Centralized Vs Distributed



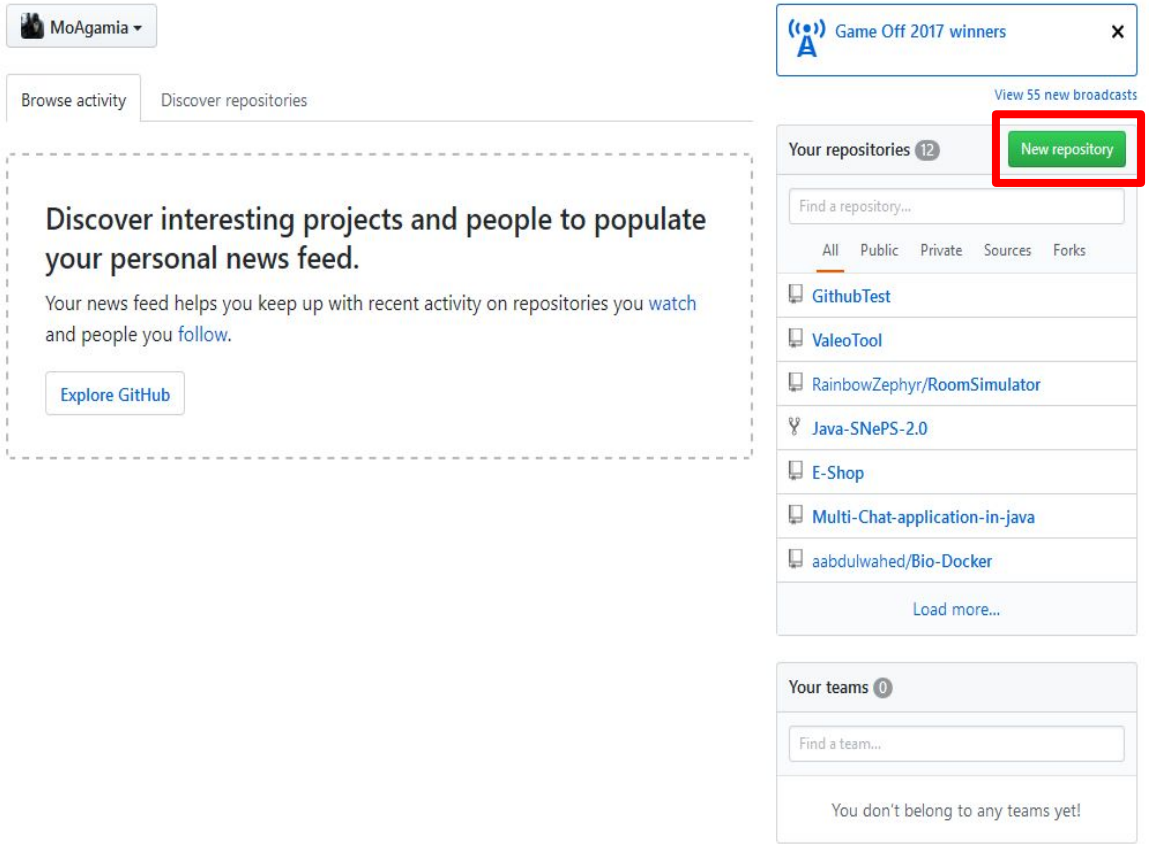


Create a Github Account

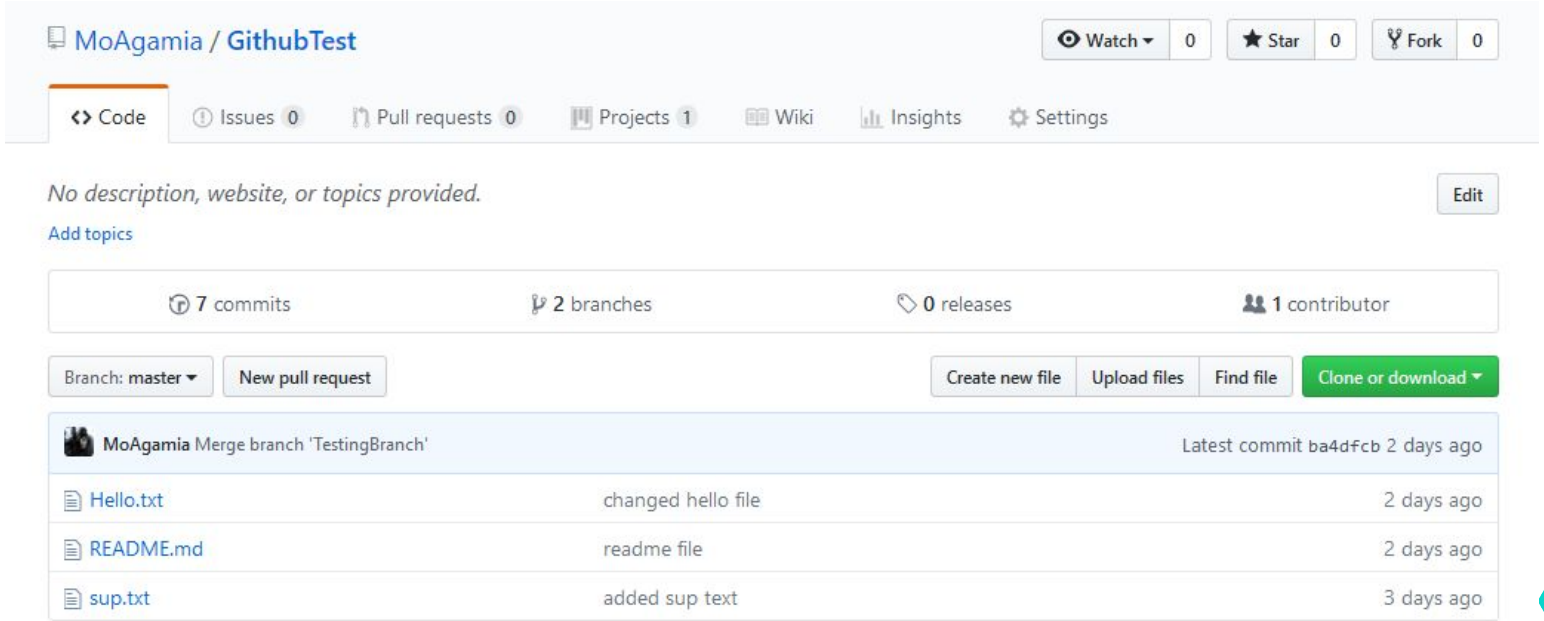
https://github.com/join



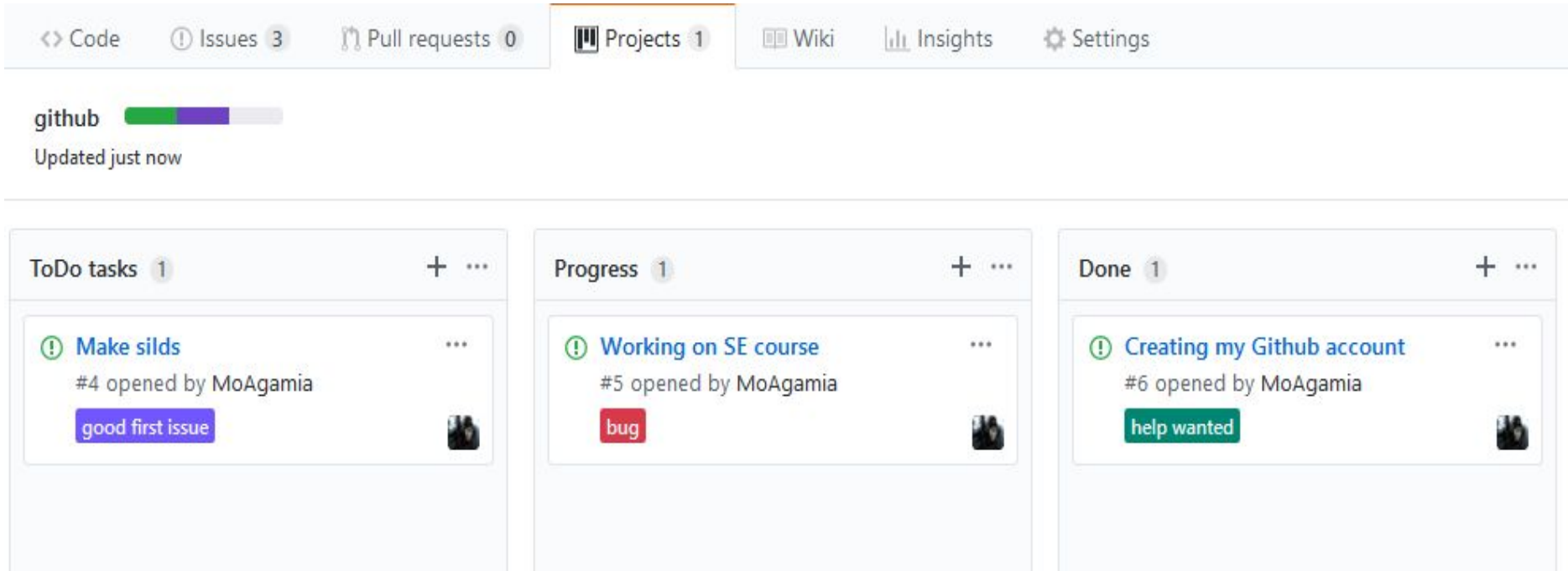
Create a Github Repository



Github Repository



Github Project Board



Install Git

Mac

https://git-scm.com/download/mac

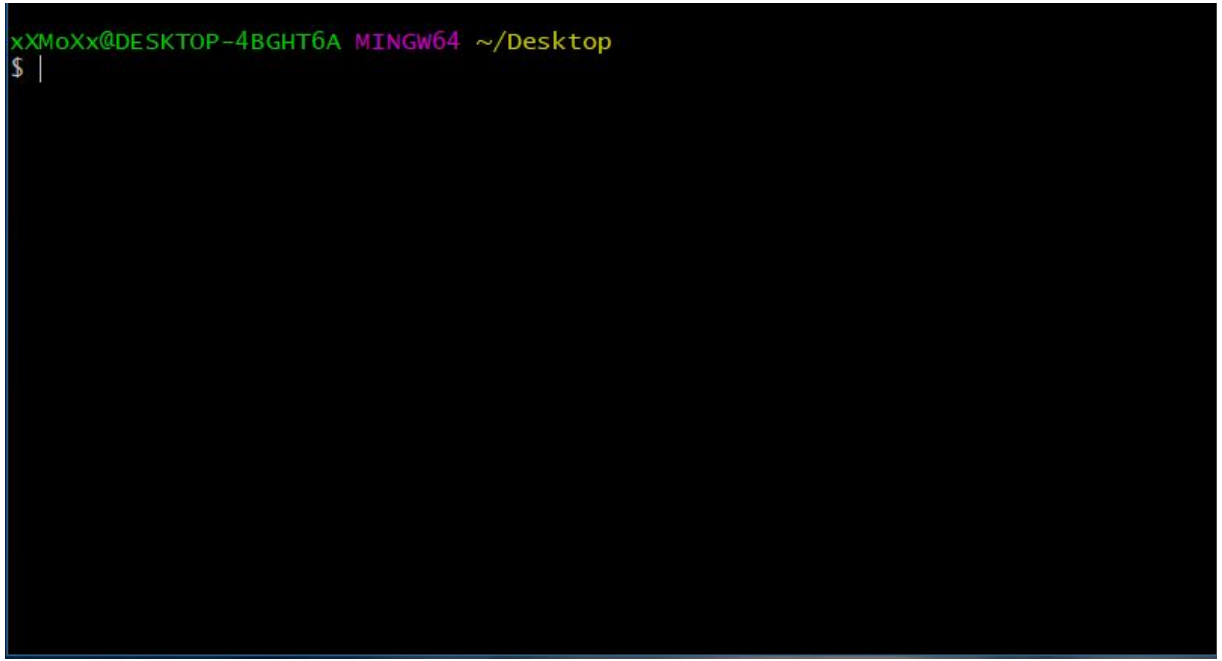
Windows

https://git-scm.com/download/win

Linux

https://git-scm.com/download/linux

Git Terminal

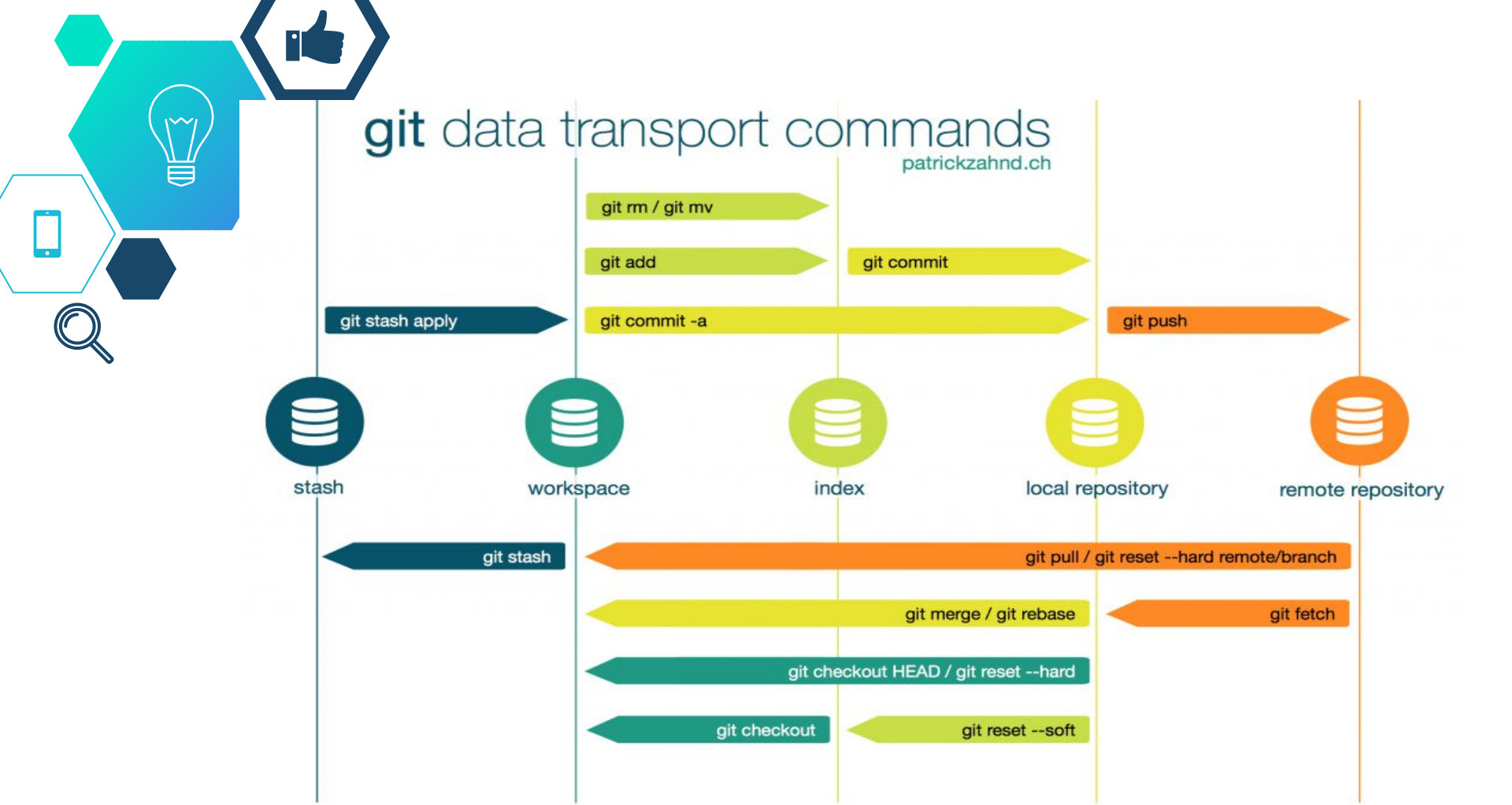


Git general commands

Initialize Git	> git init
Show the working tree status	> git status
Get everything ready to commit	> git add .
Get custom file ready to commit	> git add index.html
Commit changes	> git commit -m "Message"
Remove files from Git	> git rm index.html

Git general commands

Create branch	> git branch branchname
Change to branch	> git checkout branchname
True merge (fast forward)	> git merge branchname
Show commits	> git log
Compare modified files	> git diff
Clone to localhost	> git clone https://github.com/user/project.git


git data transport commands
patrickzahnd.ch
git rm / git mv
git add
git commit
git stash apply
git commit -a
git push
stash
workspace
index
local repository
remote repository
git stash
git pull / git reset --hard remote/branch
git merge / git rebase
git fetch
git checkout HEAD / git reset --hard
git checkout
git reset --soft

ToDo

- Go finish this basic tutorial
  https://try.github.io/levels/1/challenges/1
- Go finish these sildes
  http://courseware.codeschool.com.s3.amazonaws.com/git_real_slides.pdf
- Go finish ALL guides
  https://guides.github.com/

Thanks!

Any questions?

You can find me at:

- Github: https://github.com/MoAgamia/SE-Boot-Camp

References

- https://www.tutorialspoint.com/software_engineering/software_engineering_quick_guide.htm
- https://www.smartsheet.com/agile-vs-scrum-vs-waterfall-vs-kanban
- https://www.versionone.com/agile-101/
- https://edisciplinas.usp.br/pluginfile.php/2150022/mod_resource/content/1/1429431793.203Software%20Engineering%20by%20Somerville.pdf
- http://courseware.codeschool.com.s3.amazonaws.com/git_real_slides.pdf
- https://guides.github.com/
- https://gist.github.com/hofmannsven/6814451
- http://speechfoodie.com/git-diagram/