



Software Engineering





Plan

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





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



PLAN

- Functionality Requirements
- Initial User Interface
- Technology Platform Selection
- Technical Architecture
- Project Plan

DESIGN

- Detailed Specifications
- Finalized User Interface
- Application ARCHITECTURE
- System Interface Design
- Test Plans

MAINTENANCE

- Installation on Production
- Production Testing
- Transition on Operations
- Post Development Support
- Bugs Check
- Ongoing Maintenance

DEPLOY

- System Testing
- User Acceptance Testing
- Installation on Staging Environment

DEVELOP

- Application Code Development
- System Interface Development
- Integration with Existing APPS
- Unit and Integration Testing

Software
Development Life
Cycle(SDLC)

SDLC

Communication

Requirement Gathering

Feasibility Study

System Analysis

Software Design

Coding

Testing

Integration

Implementation

Operations & Maintenance

Disposition



Motivation



This is a software- powered world.

Satya Nadella

quoteFancy



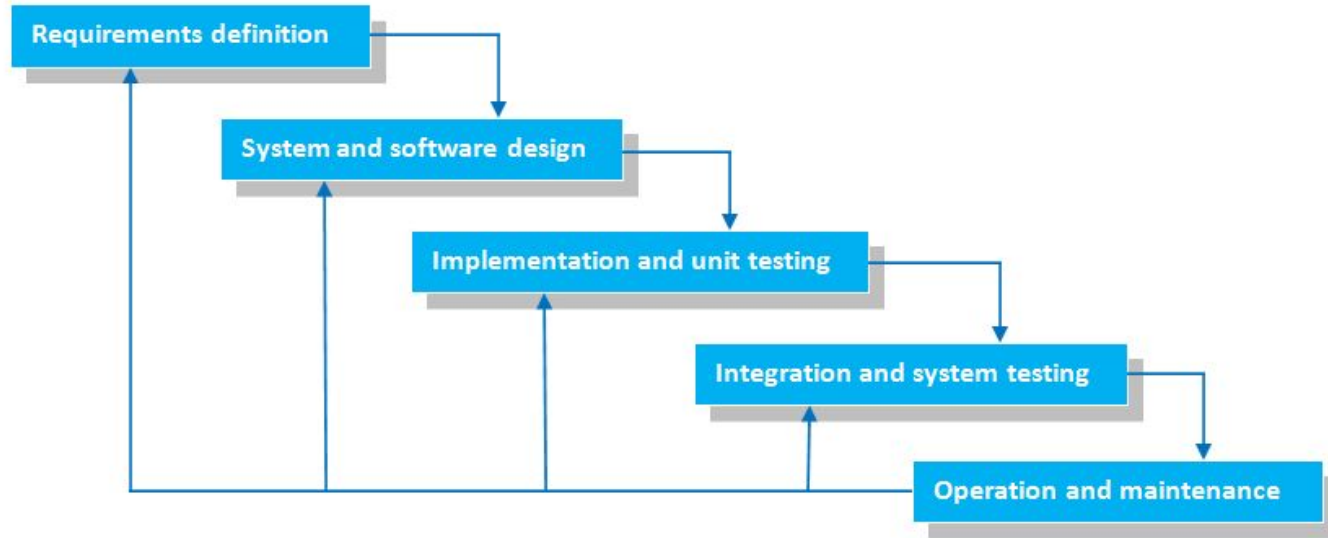


Software Process Models

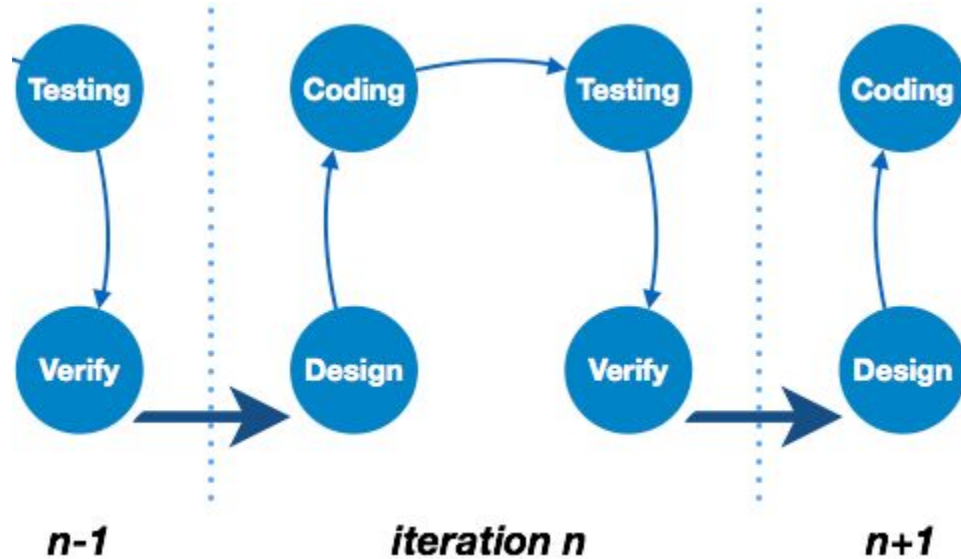


“Software Process Model, is a set of tools, methods and procedures, which are expressed clearly and defines software development life cycle”

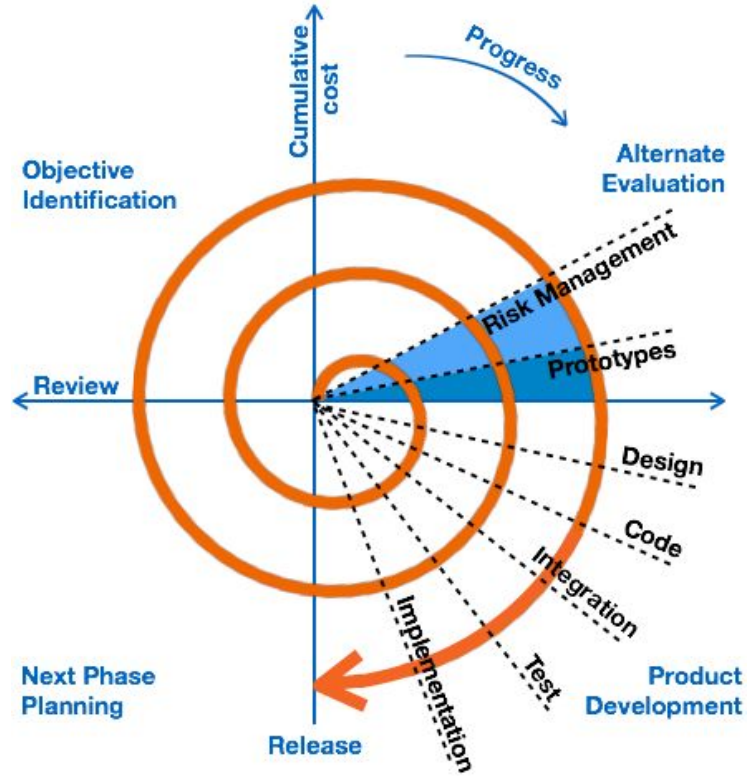
Waterfall



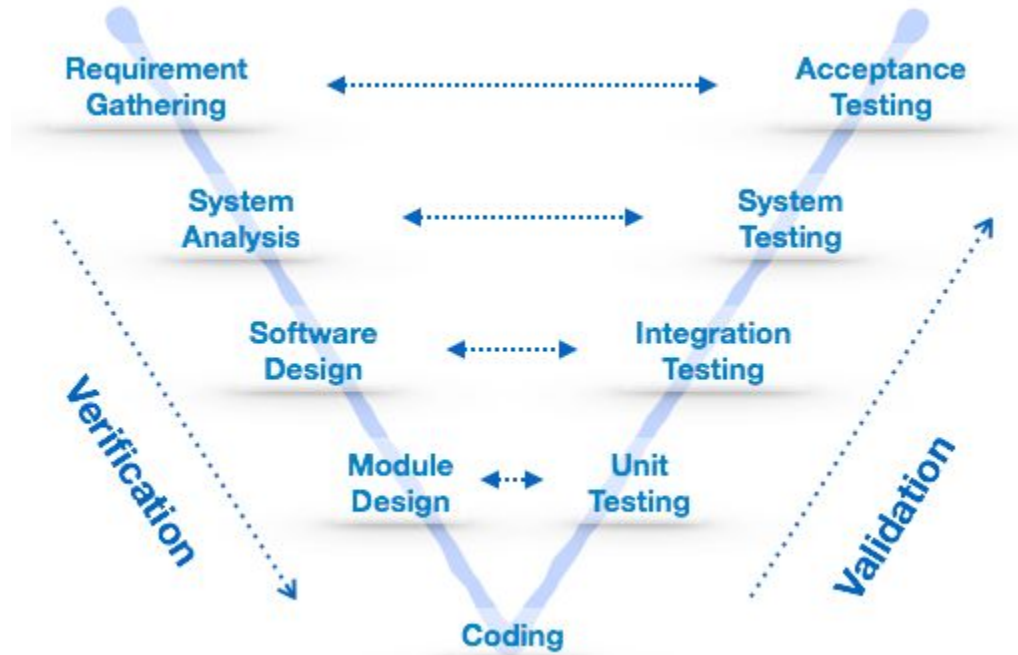
Iterative



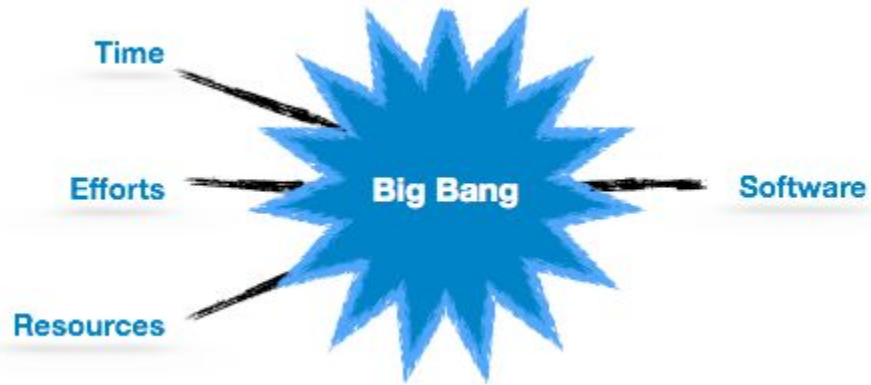
Spiral



V



Big Bang





Agile Methodology

Agile Development Cycle





Manifesto



Individuals & interactions

Working software

Customer collaboration

Responding to change



Processes & tools

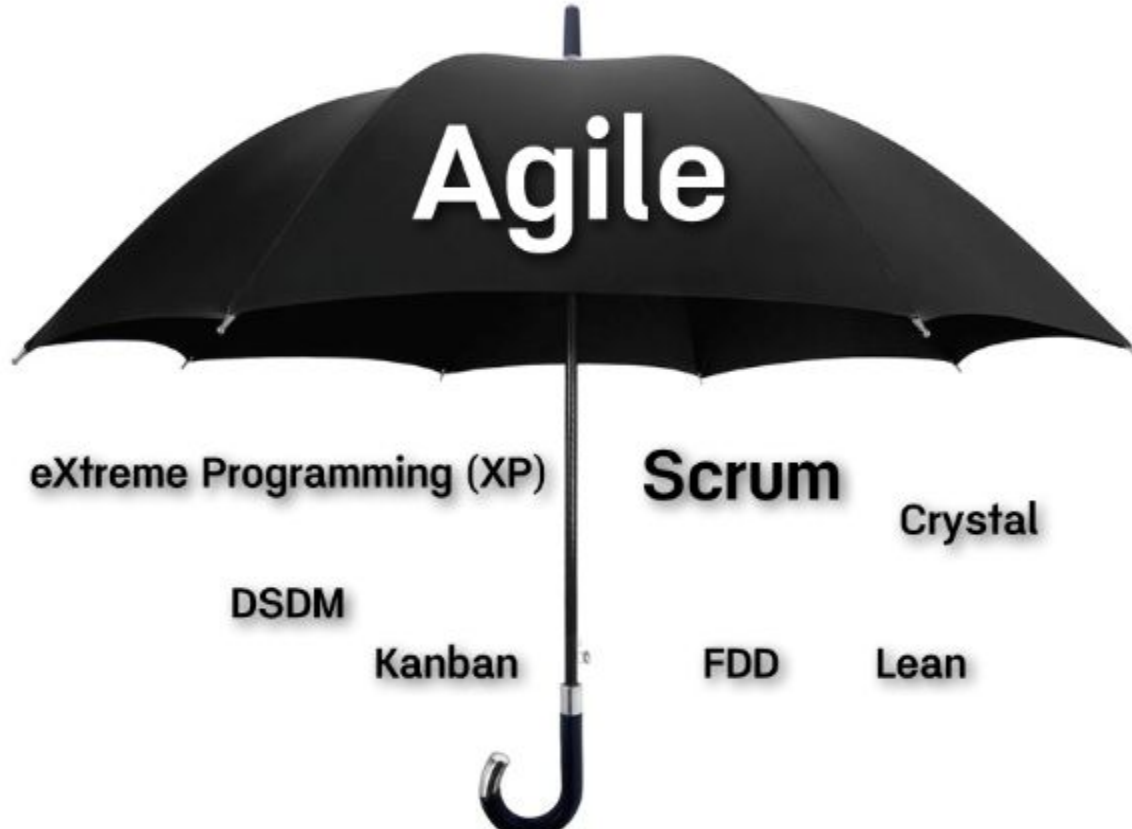
Comprehensive
documentation

Contract
negotiation

Following a plan



Methodologies

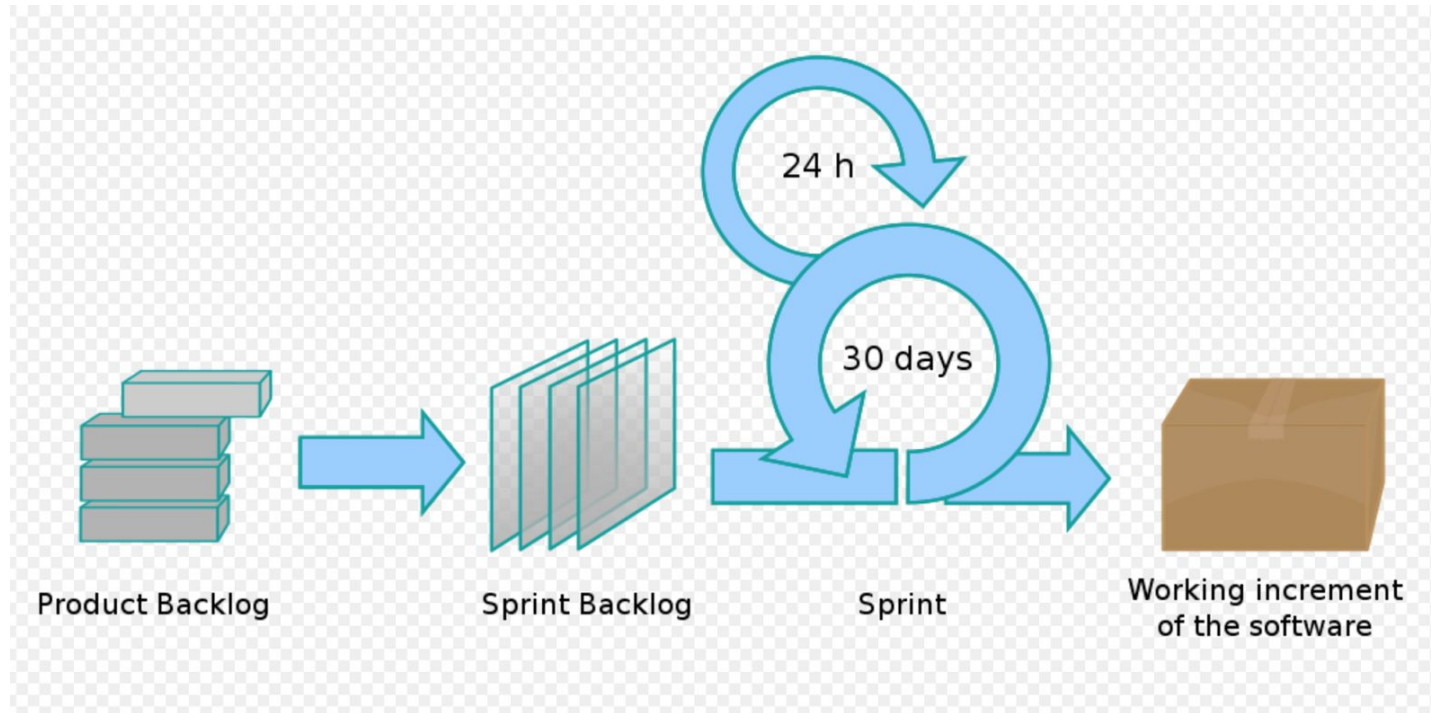




Scrum



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.



Github

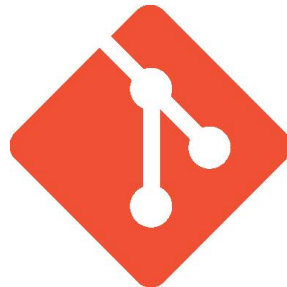


“GitHub is a Distributed Version Control System (DVCS).

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



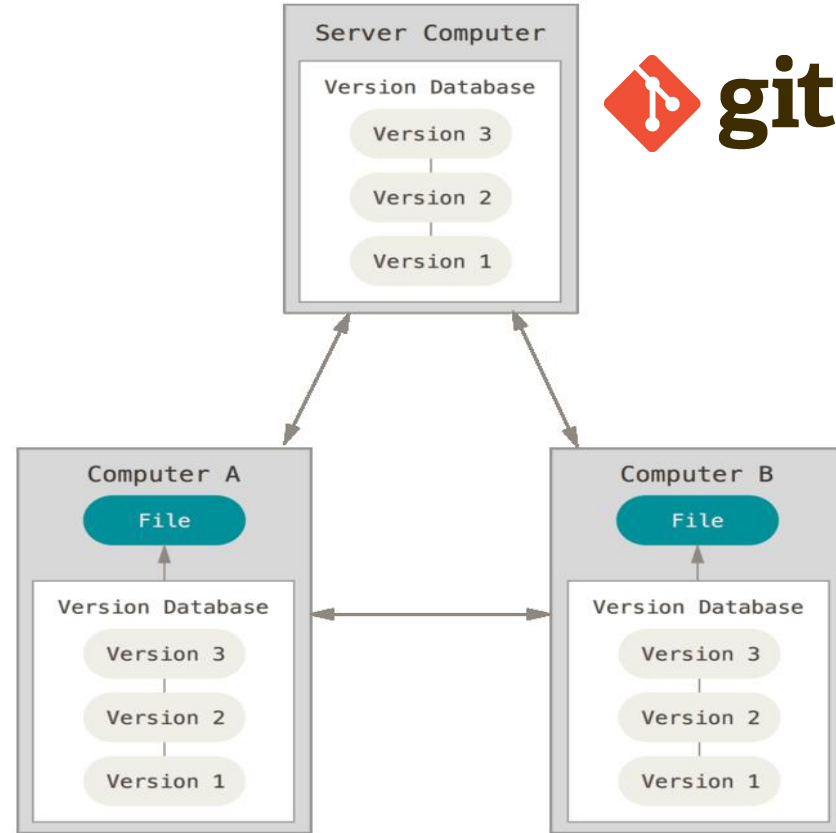
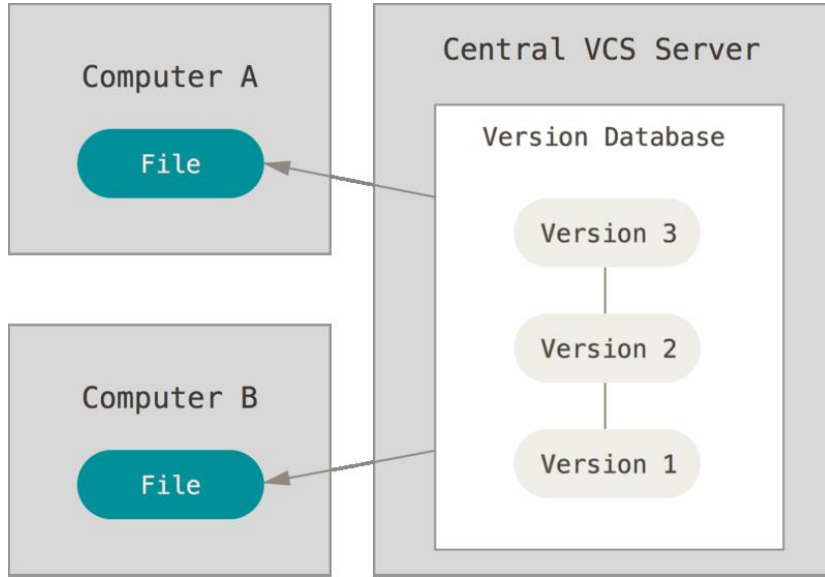
“Version control systems are a category of software tools that help a software team manage changes to source code over time”



git



Centralized Vs Distributed





Create a Github Account

<https://github.com/join>

Join GitHub

The best way to design, build, and ship software.



Step 1:
Create personal account



Step 2:
Choose your plan



Step 3:
Tailor your experience

Create your personal account

Username

This will be your username. You can add the name of your organization later.

Email address

We'll occasionally send updates about your account to this inbox. We'll never share your email address with anyone.

Password

Use at least one lowercase letter, one numeral, and seven characters.

By clicking on "Create an account" below, you are agreeing to the [Terms of Service](#) and the [Privacy Policy](#).

Create an account

You'll love GitHub

Unlimited collaborators

Unlimited public repositories

- ✓ Great communication
- ✓ Frictionless development
- ✓ Open source community



Create a Github Repository

MoAgamia

Browse activityDiscover repositories

Discover interesting projects and people to populate your personal news feed.

Your news feed helps you keep up with recent activity on repositories you [watch](#) and people you [follow](#).

Explore GitHub

Game Off 2017 winners

View 55 new broadcasts

Your repositories 12

New repository

Find a repository...

AllPublicPrivateSourcesForks

GithubTest

ValeoTool

RainbowZephyr/RoomSimulator

Java-SNePS-2.0

E-Shop

Multi-Chat-application-in-java

aabdulwahed/Bio-Docker

Load more...

Your teams 0

Find a team...

You don't belong to any teams yet!

Github Repository

MoAgamia / GithubTest

Watch 0

Star 0

Fork 0

Code

Issues 0

Pull requests 0

Projects 1

Wiki

Insights

Settings

No description, website, or topics provided.

Edit

Add topics

7 commits

2 branches

0 releases

1 contributor

Branch: master

New pull request

Create new file

Upload files

Find file

Clone or download



MoAgamia Merge branch 'TestingBranch'

Latest commit ba4dfcb 2 days ago

Hello.txt

changed hello file

2 days ago

README.md

readme file

2 days ago

sup.txt

added sup text

3 days ago



MoAgamia



Github Project Board

<> Code

! Issues 3

🔗 Pull requests 0

📁 Projects 1

📖 Wiki

📊 Insights

⚙ Settings

github



Updated just now

ToDo tasks 1



! Make silds

#4 opened by MoAgamia

good first issue



Progress 1



! Working on SE course

#5 opened by MoAgamia

bug



Done 1



! Creating my Github account

#6 opened by MoAgamia

help wanted





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

```
xXMoXx@DESKTOP-4BGHT6A MINGW64 ~/Desktop  
$ |
```



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



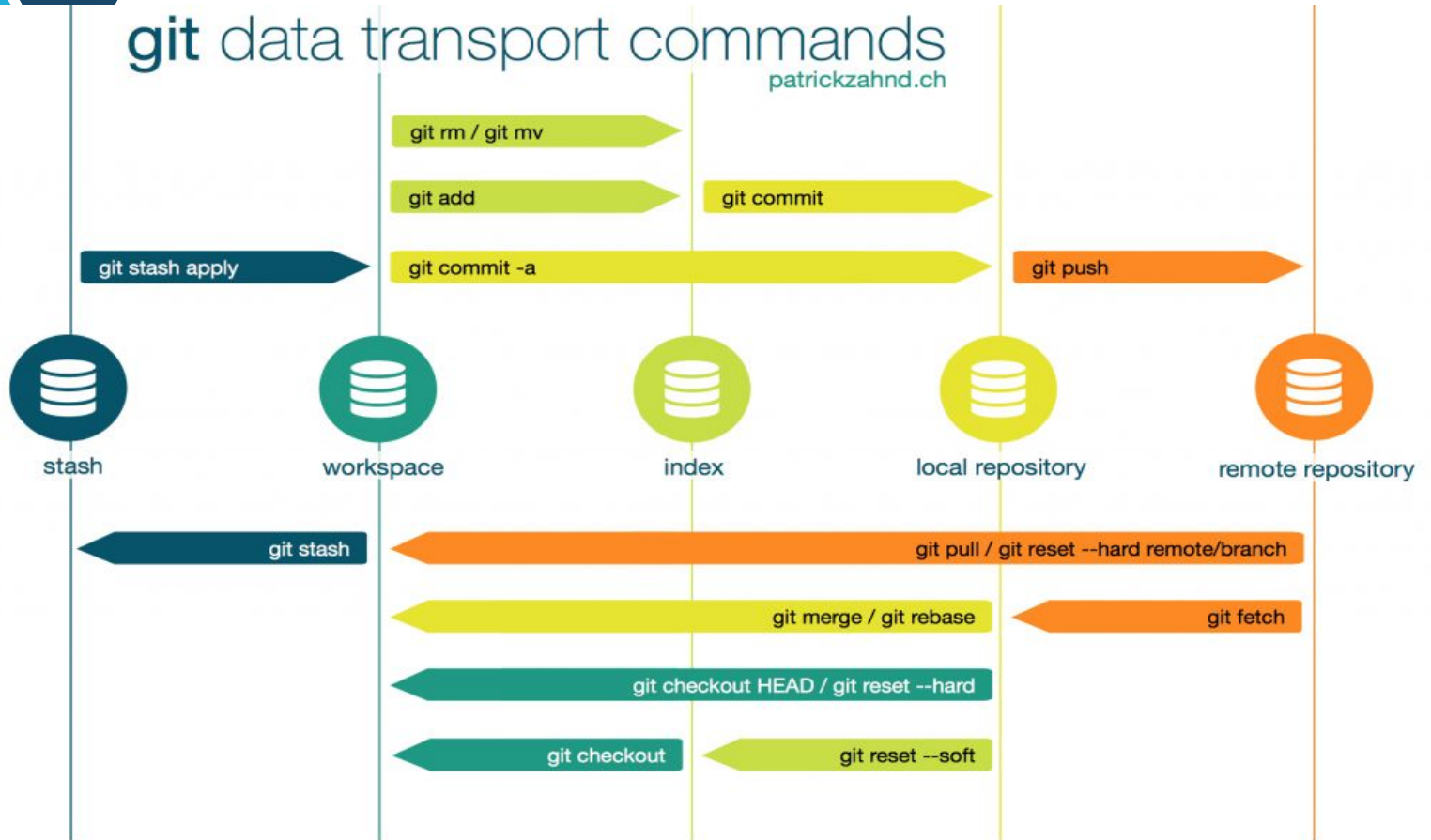
Git general commands

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





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/>

