Software Product Design and Development I

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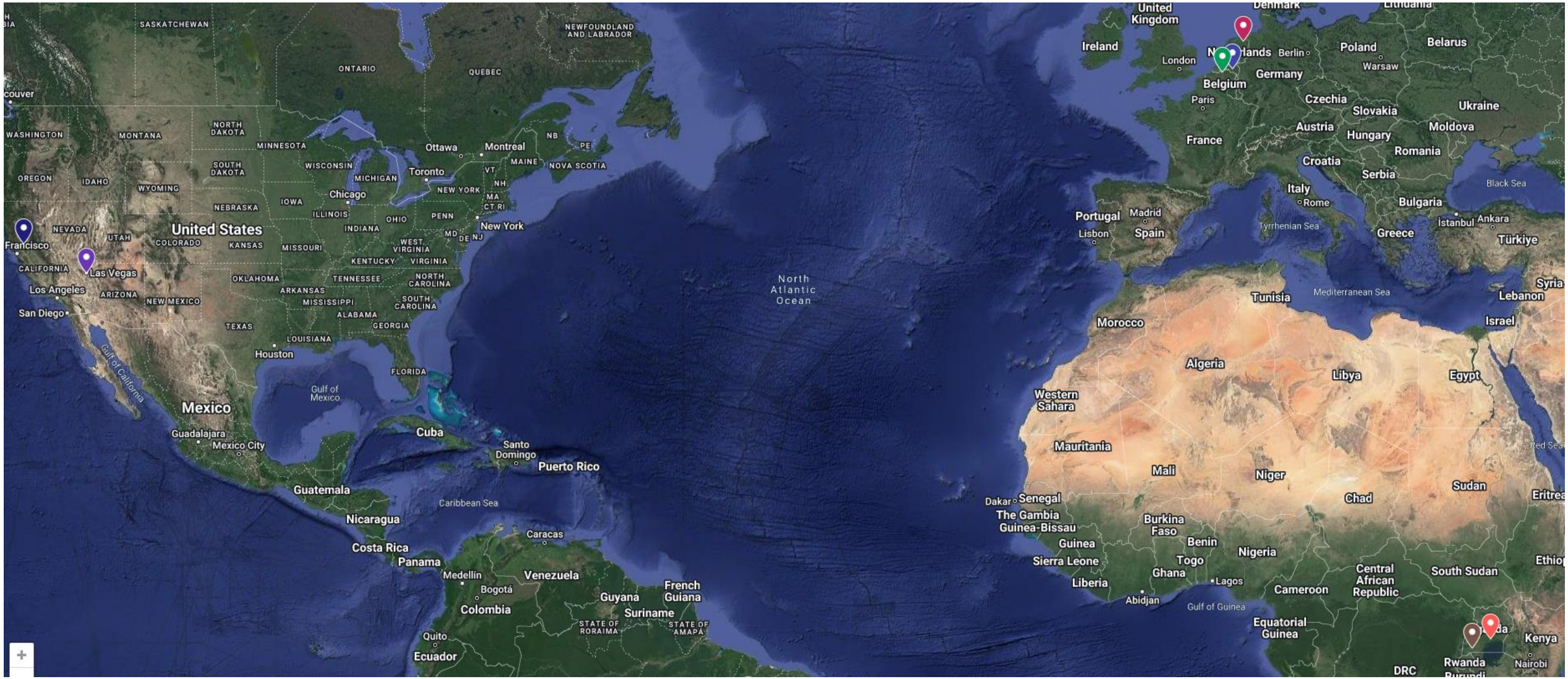
My Journey to UNLV



S.E.T. MIXER

Howard R. Hughes College of Engineering, College of Sciences and Career Services & Workforce Development invite **students** to:

- Explore career opportunities
- Meet employers looking to hire UNLV students for jobs and internships
- Make connections to broaden your network in Science, Engineering, or Tech (SET)

This event is free and open to all undergrad, grad, and alumni students in Science, Engineering, and Technology.
Reminder: Bring your resume!

Tuesday
Sept. 9, 2025

Time
4:30 to 7:00 p.m.

UNLV
Advanced Engineering Building (AEB) and Ham Hall

FREE PROFESSIONAL PORTRAITS!

UNLV
HOWARD R. HUGHES COLLEGE OF ENGINEERING

UNLV
COLLEGE OF SCIENCES

JOIN US!

Need to boost your resume, cover letter, elevator pitch, or not sure where to start? Schedule an appointment via Handshake.

Questions? Contact Alejandro Chacon at alejandro.chacon@unlv.edu or 702-895-1892

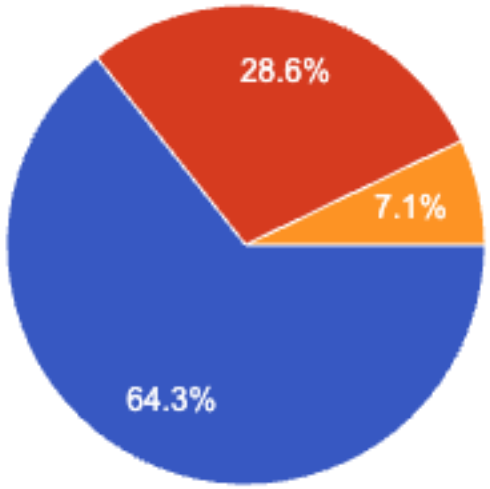
Administration

- Background Information survey.

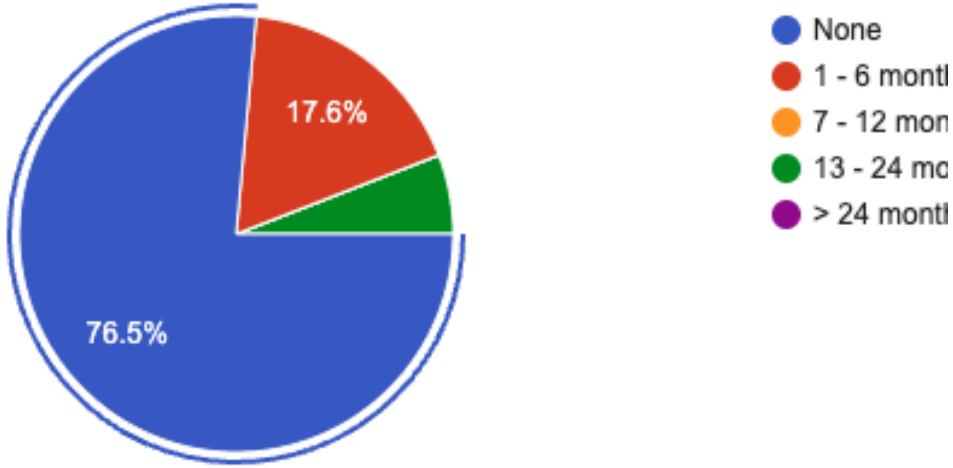
- Go to - https://johnxu21.github.io/teaching/CS472/

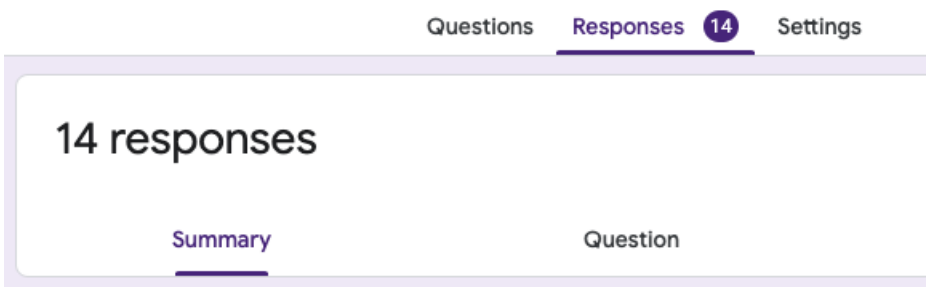
How many months of industry software development experience did you have before the beginning of class 472/672?

Current Semester



Last Semester





Inclusivity and Gradual Learning

- We want to build confidence for all students through gradual, structured learning
- Familiar material for experienced developers serves as refinement and perspective-sharing
- Help in reflecting real-world collaboration where diverse teams work together
- Encourages mutual support between **experienced** and **novice** peers

Software Product Design and Development I

High Quality Software

Flexible

Reusable

Maintainable

Collaboratively

7 – 8 developers / team project

Design Portfolio I

Design Portfolio II

>= 3 PRs
>= 3 PR reviews
/team member

Design Portfolio III

>= 3 PRs
>= 3 PR reviews
/team member

Agile methodology: Development delivers frequent, small software updates, enabling teams to quickly adapt to changes and continuously improving the product based on feedback.

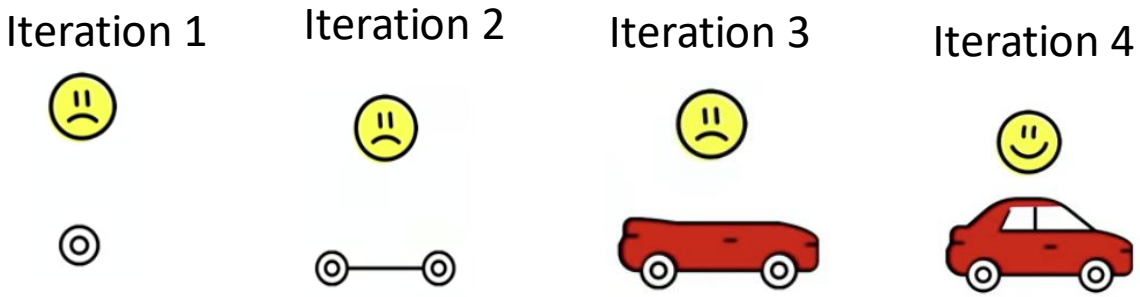
Minimum Viable product (MVP)

- During the DP we will focus on developing an MVP
- An MVP is the minimal thing that you can do to test a value hypothesis and gain learning and understanding
- MVP is focus on learning, not delivery
- Let us explain an MVP with an example using Agile developmemnt

Minimum Viable product (MVP)

Customer wants a red car

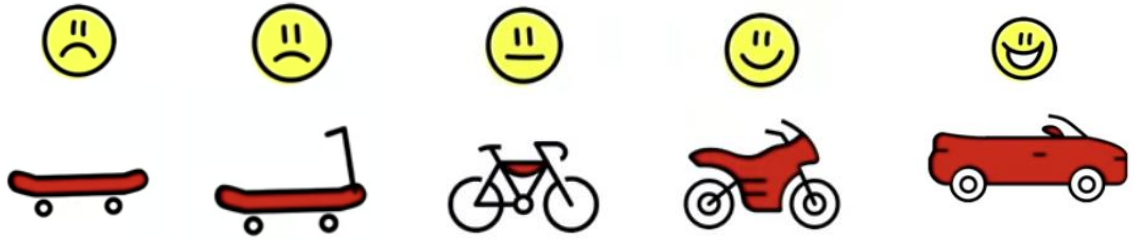
Agile Dev 1



No feedback

- Customer got exactly what they asked for
  - the dev team was just following a plan.
  - Increments were not useful.
- Team does not understand the value of MVP

Agile Dev 2



Valuable feedback on every iteration

- Customer got what they desired
  - Worked iteratively with the dev team.
- Developed something a little bit different but it's closer to what the customer really wanted.
- Giving the customer what they really want is the main purpose of delivering an MVP.
- A minimal viable product is a tool for learning.

Client Projects

Project

Groups | FAQ | Presentations | Client Projects | SD Competition

Choosing a **client-sponsored project** gives your team the opportunity to work with real stakeholders who provide requirements, feedback, and direction throughout the semester. This allows you to focus your energy on *design and development* while still benefiting from client input during implementation.

In contrast, teams that create their own custom projects must define requirements from scratch—sometimes leading to unrealistic or less engaging "virtual client" scenarios. By working with a client, you gain the added benefit of **clearer goals, real-world constraints, and professional collaboration** that mirror industry practice.

Review the opportunities below and consider selecting a client project that aligns with your team's interests and career goals.

- Novel Gamified Digital Commerce Platform for consumers at Casinos
  - Project Details
  - Video of the project
- Estimarmine
  - Project Details
- Farcaster Mini-App Development Project
  - Project Details
- *I am expecting more projects. I will update as they become available. Please check back soon.**

Why Choose Client Projects?

- Client projects come with **real requirements** and **ongoing feedback**.
- Don’t worry if the **tech stack is new**.
- Working with a client gives you:
  - **Professional collaboration experience** with real stakeholders.
  - A chance to **showcase applied learning** to employers.
  - A more **impactful capstone project** you’ll be proud to put on your résumé.

Farcaster Mini-App Development Project

Required Baseline Skills

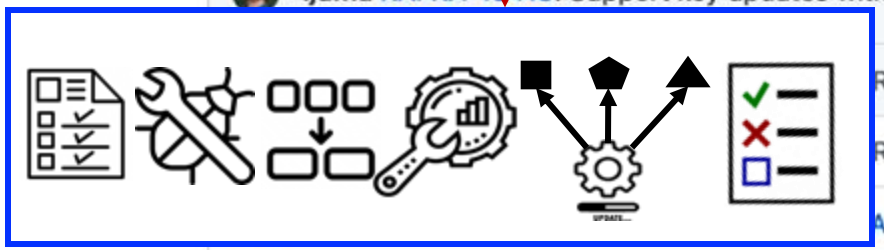
All students must demonstrate proficiency in:

- Basic HTML/CSS/JavaScript
- Version control with Git/GitHub
- Command line basics
- Static site deployment (Vercel/Netlify)
- Effective use of LLMs for development assistance

Skills to be Developed

- React and TypeScript

- Farcaster protocol and mini-app constraints
- API integration and database management
- Web3 fundamentals
- Pair programming and agile methodology
- Project leadership and stakeholder communication



apache / kafka Public

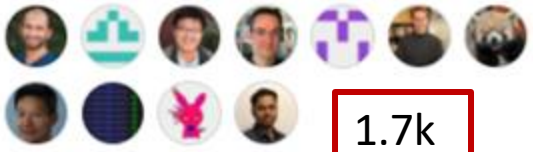
Watch 1.1k | Fork 11.3k | Star 21.5k

Pull requests 953 Open ✓ 11,016 Closed

ijuma KAFKA-1[illegible]418: Support key updates with TLS 1.3 (#11966) ... 5aed178 12 hours ago 9,874 commits

	R: Adding kafka-storag[illegible].bat file (similar to kafka-storage.sh) fo...	16 days ago
	R: Fix class comparis[illegible] in `AlterConfigPolicy.RequestMetadata...	8 days ago
	[illegible]966)	12 hours ago
config	MINOR	nfiguration files...	last month
connect	KAFKA	lLog using older...	5 days ago
core	MINOR	hBufferedRecei...	21 hours ago
docs	KAFKA	3)	22 hours ago
examples		s in examples README (#855...	2 years ago
generator/src		gged string fields in messag...	7 months ago
gradle		(#11885)	14 days ago
jmh-benchmarks		(#11870)	19 days ago
licenses	MINOR: Add missing licenses and update versions in LICENSE-binary...		7 months ago

Contributors 884



1.7k

+ 873 contributors

Languages

Java 74.2% Scala 22.7%

Python 2.7% Shell 0.2%

Roff 0.1% Batchfile 0.1%

Apache Kafka is a distributed event store and stream-processing platform

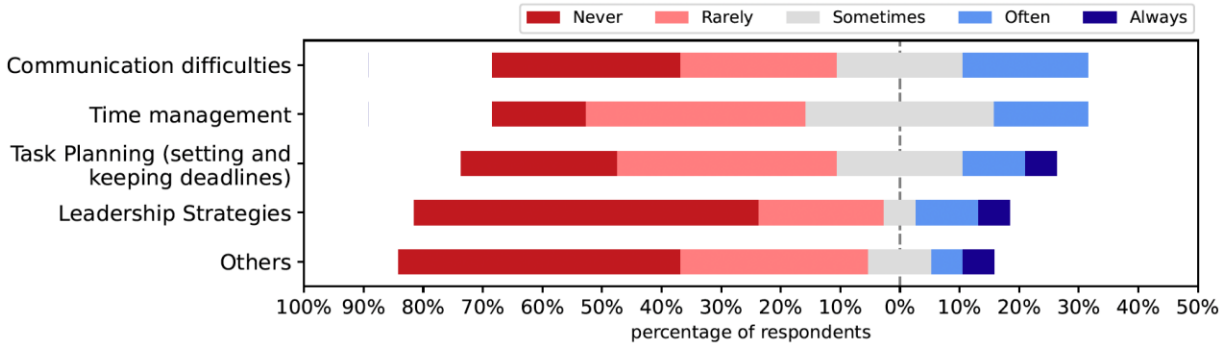
“People-related factors tend to be the greatest challenges—not technology.”

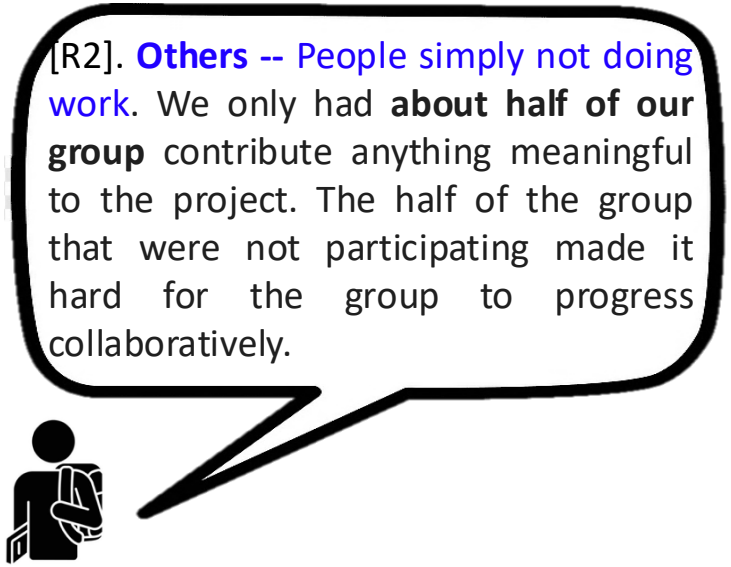
George Spafford,
Senior Director Analyst
at Gartner

Survey Results – Team Challenges

Qn.6: Please rank the following challenges that could have impeded effective teamwork.

Qn.7: If your ranking for "Others" in Qn.6 above was 4 or 5, kindly provide us what it represents.





What is social coding?

- Open source practice - Open Source for Inner Source
  - Inner source - adoption of open-source development practices, tools, and culture within an organization
- All repositories are public
- Everyone is encouraged to contribute
- Contribute back via Pull Requests

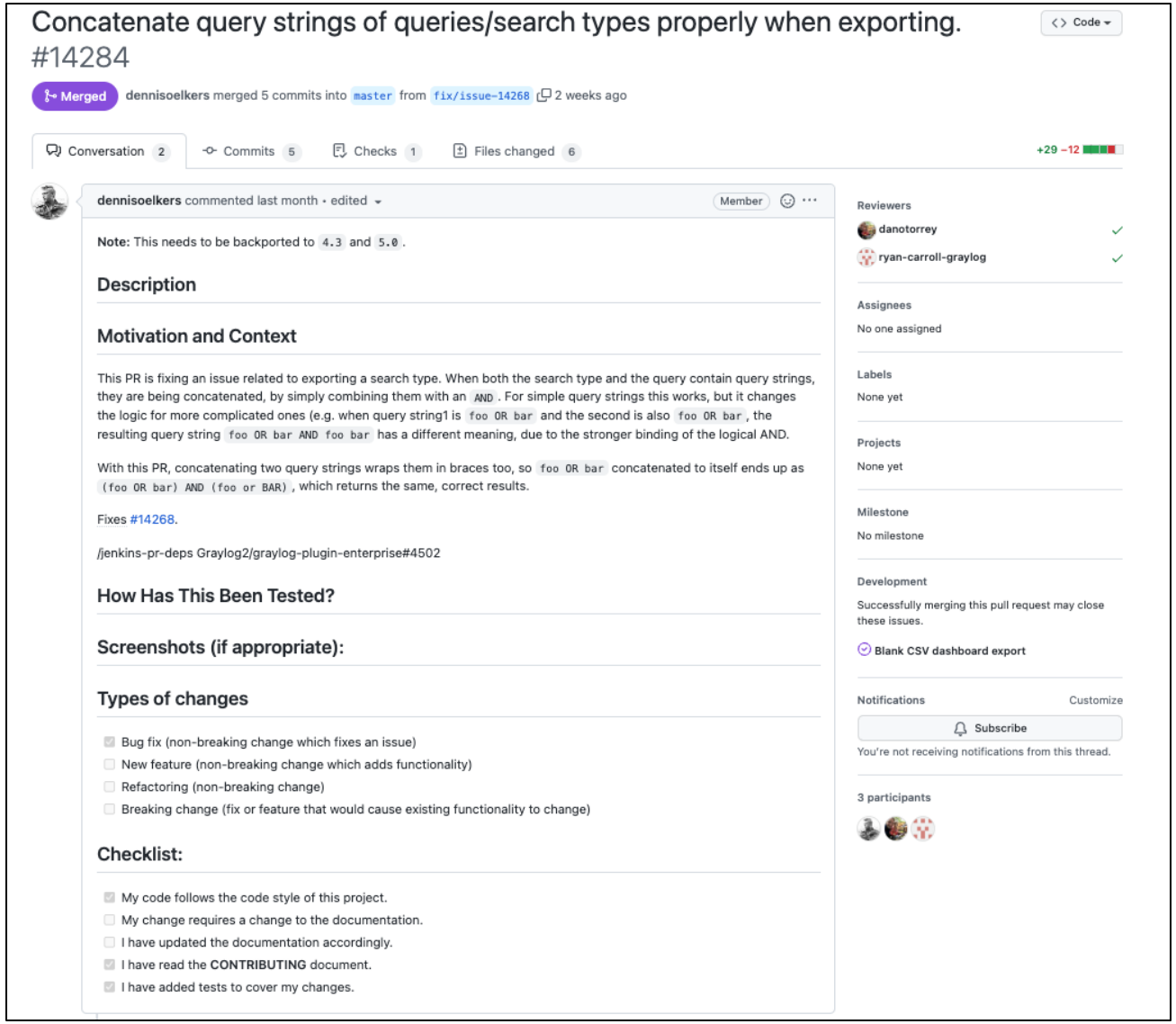
Git-Github repository guidelines

- Create a repository for a project
- Create a new branch for every issue
- Use a Pull Requests to merge to mainline
- Every Pull Request is an opportunity for code review

Git Feature branch workflow

Best Practices Pull Requests Documentation

https://github.com/Graylog2/graylog2-server/pull/14284



Concatenate query strings of queries/search types properly when exporting. #14284

Code

Merged dennisoelkers merged 5 commits into master from fix/issue-14268 2 weeks ago

Conversation 2 Commits 5 Checks 1 Files changed 6 +29 −12

dennisoelkers commented last month • edited Member

Note: This needs to be backported to `4.3` and `5.0`.

Description

Motivation and Context

This PR is fixing an issue related to exporting a search type. When both the search type and the query contain query strings, they are being concatenated, by simply combining them with an `AND`. For simple query strings this works, but it changes the logic for more complicated ones (e.g. when query string1 is `foo OR bar` and the second is also `foo OR bar`, the resulting query string `foo OR bar AND foo bar` has a different meaning, due to the stronger binding of the logical AND.

With this PR, concatenating two query strings wraps them in braces too, so `foo OR bar` concatenated to itself ends up as `(foo OR bar) AND (foo or BAR)`, which returns the same, correct results.

Fixes #14268.

/jenkins-pr-deps Graylog2/graylog-plugin-enterprise#4502

How Has This Been Tested?

Screenshots (if appropriate):

Types of changes

- [x] Bug fix (non-breaking change which fixes an issue)
- [ ] New feature (non-breaking change which adds functionality)
- [ ] Refactoring (non-breaking change)
- [ ] Breaking change (fix or feature that would cause existing functionality to change)

Checklist:

- [x] My code follows the code style of this project.
- [ ] My change requires a change to the documentation.
- [ ] I have updated the documentation accordingly.
- [x] I have read the **CONTRIBUTING** document.
- [x] I have added tests to cover my changes.

Reviewers
danotorrey ✓
ryan-carroll-graylog ✓

Assignees
No one assigned

Labels
None yet

Projects
None yet

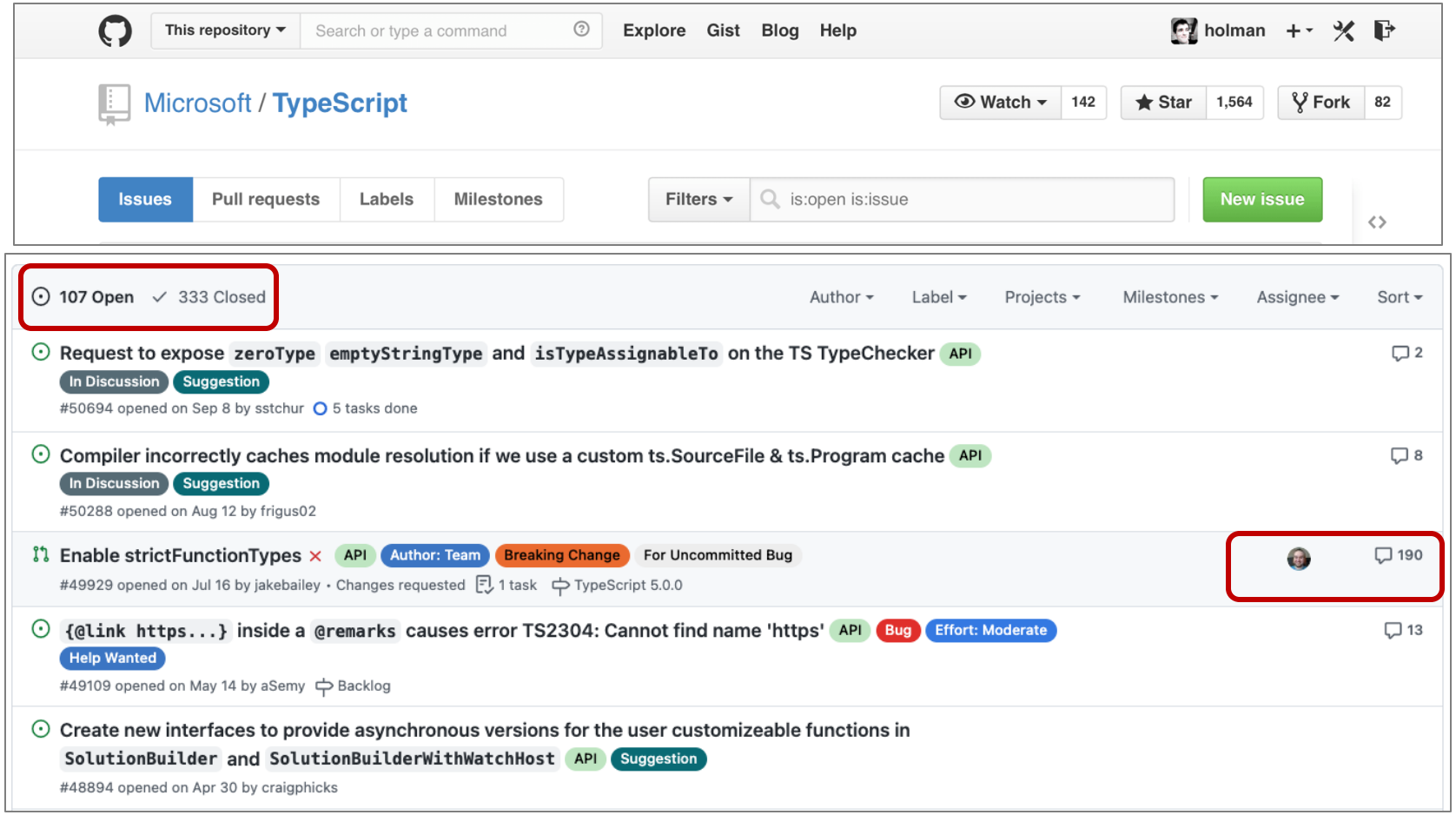
Milestone
No milestone

Development
Successfully merging this pull request may close these issues.
Blank CSV dashboard export

Notifications Customize
Subscribe
You're not receiving notifications from this thread.

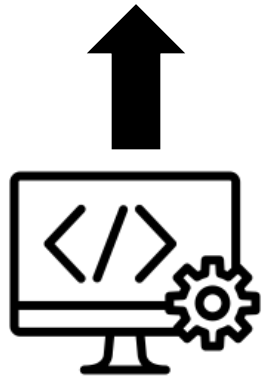
3 participants

Issue Tracker - GitHub



Issues

- Use cases
- Bugs to fix
- Features to add
- Documentation



Software Project

Testing

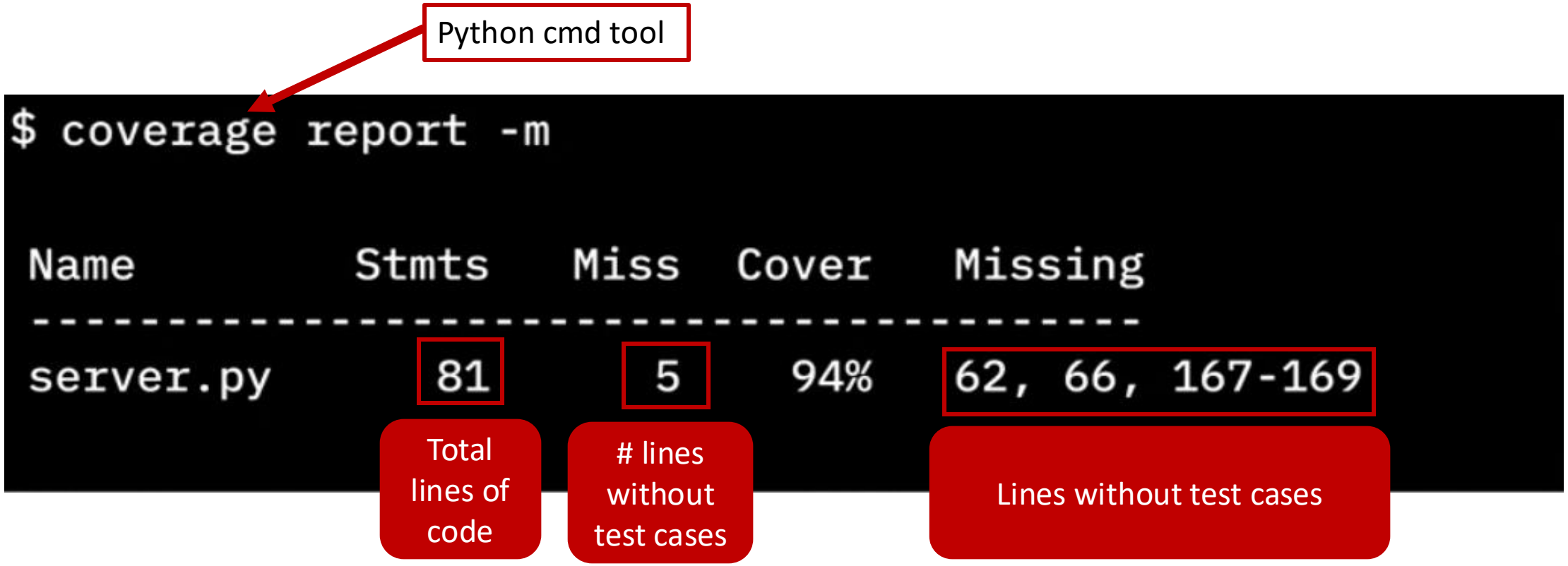
"If it is worth building, it is worth testing.

If it is not worth testing, why are you wasting your time working on it?"

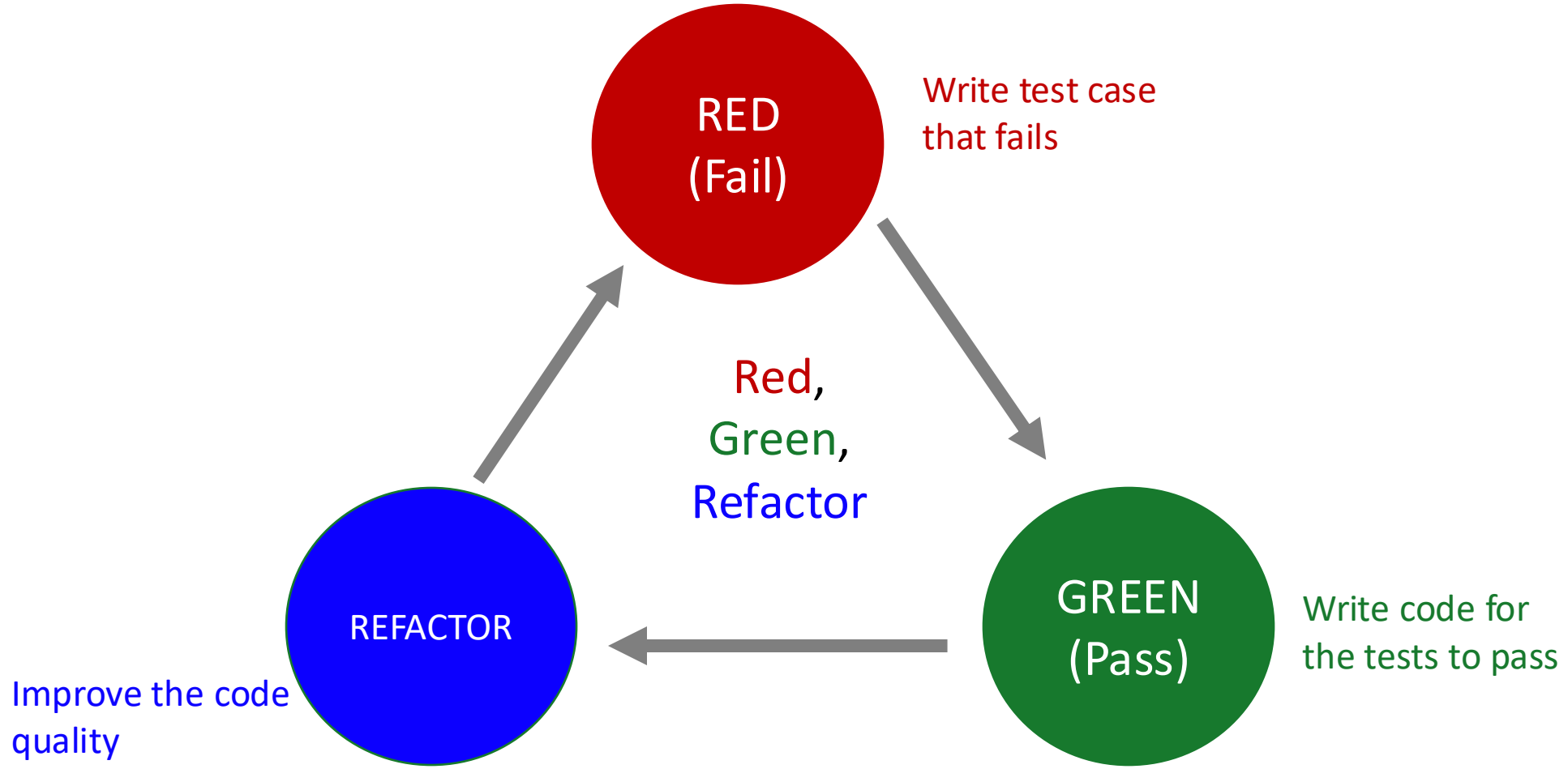
Scott Ambler, agiledata.org

Importance of test coverage

- High test coverage gives you confidence that your code works as expected
- Test coverage reports can reveal which lines of code were not tested

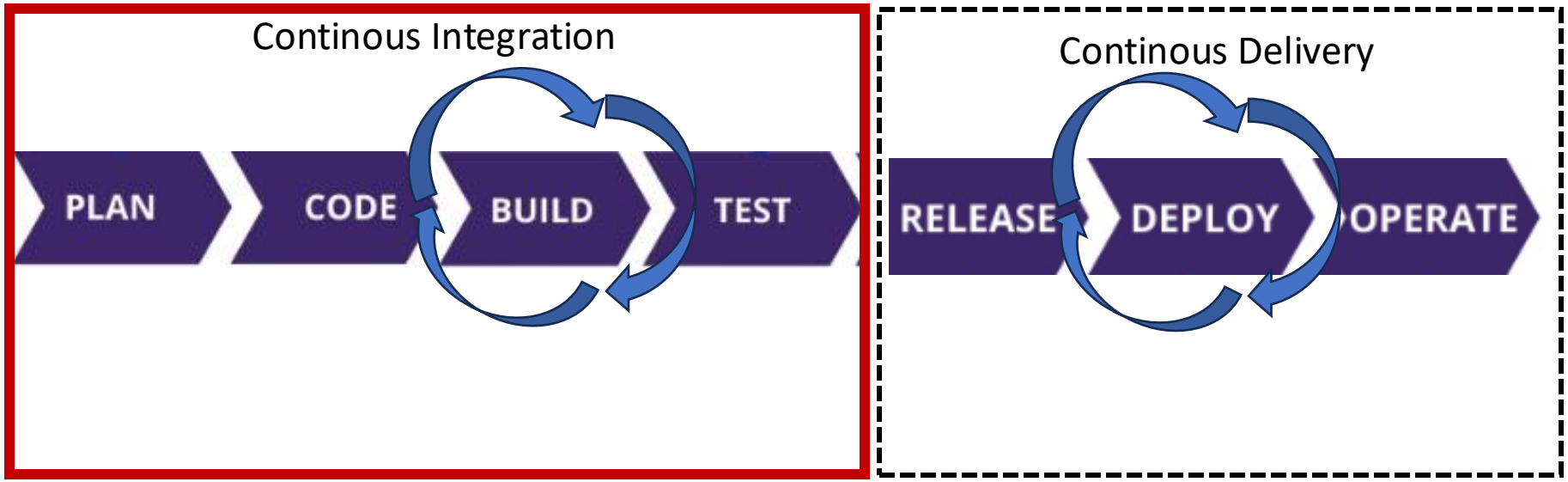


Basic TDD workflow

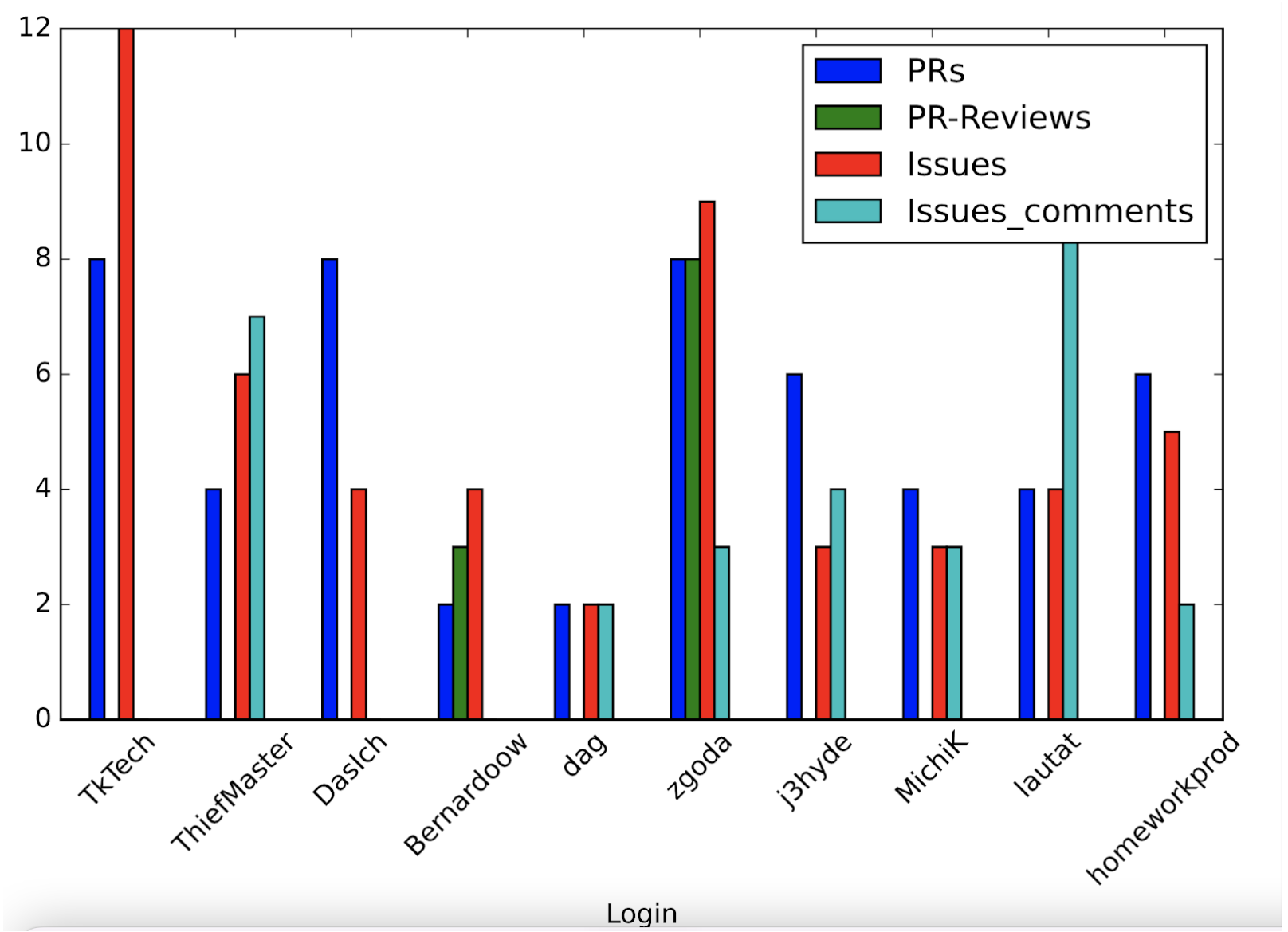


I have prepared the lab which will guide you in practicing with TDD

CI/CD pipeline



Assessment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PRs
PR-Reviews
Issues
Issues_comments
TkTech
ThiefMaster
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Bernardoow
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A list of previous projects by students

https://github.com/orgs/UNLV-CS472-672/repositories?type=all