IOB22

Digital Product Development

Demo

TU Delft

Module 6 Development

By Kars Alfrink and Jacky Bourgeois

Building Rhythm: Iterative Development with GitLab

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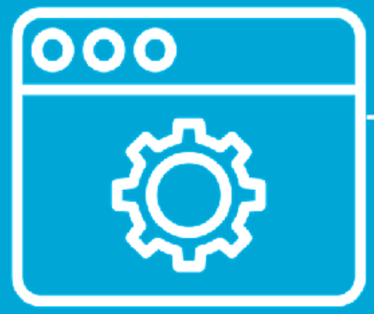
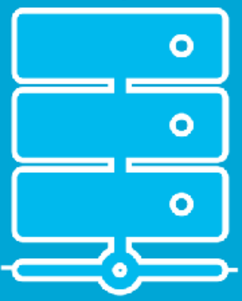
Digital Product Development





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Credits

Background: https://www.pexels.com/photo/grey-wall-2117937/

Music: https://www.bensound.com

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Digital Product Development

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Module 6 Development

By Jacky Bourgeois

- What are Software Process Models?
- What are Testing Prototypes

Software Development Life Cycle

- Analysis and Planning
- Requirements
- Design and Prototyping
- Software development
- Testing
- Deployment
- Maintenance and update

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Shared Understanding

- Shared vocabulary
- Communication channels and expectations
- Avoid scope creep
- Approach to bugs, new features and updates
- Clear roles and responsibilities

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Roles in the Team

product manager

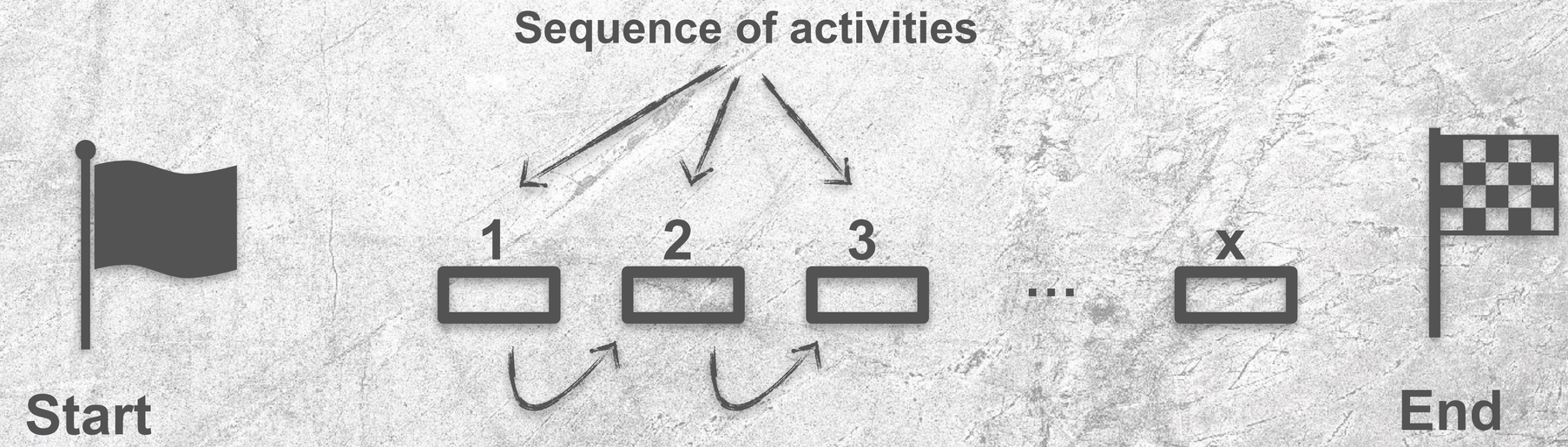
engineers

product designer

data analysts

product marketing manager

Software Process Model



Waterfall — Agile

top-down
linear process

bottom-up
non-linear process

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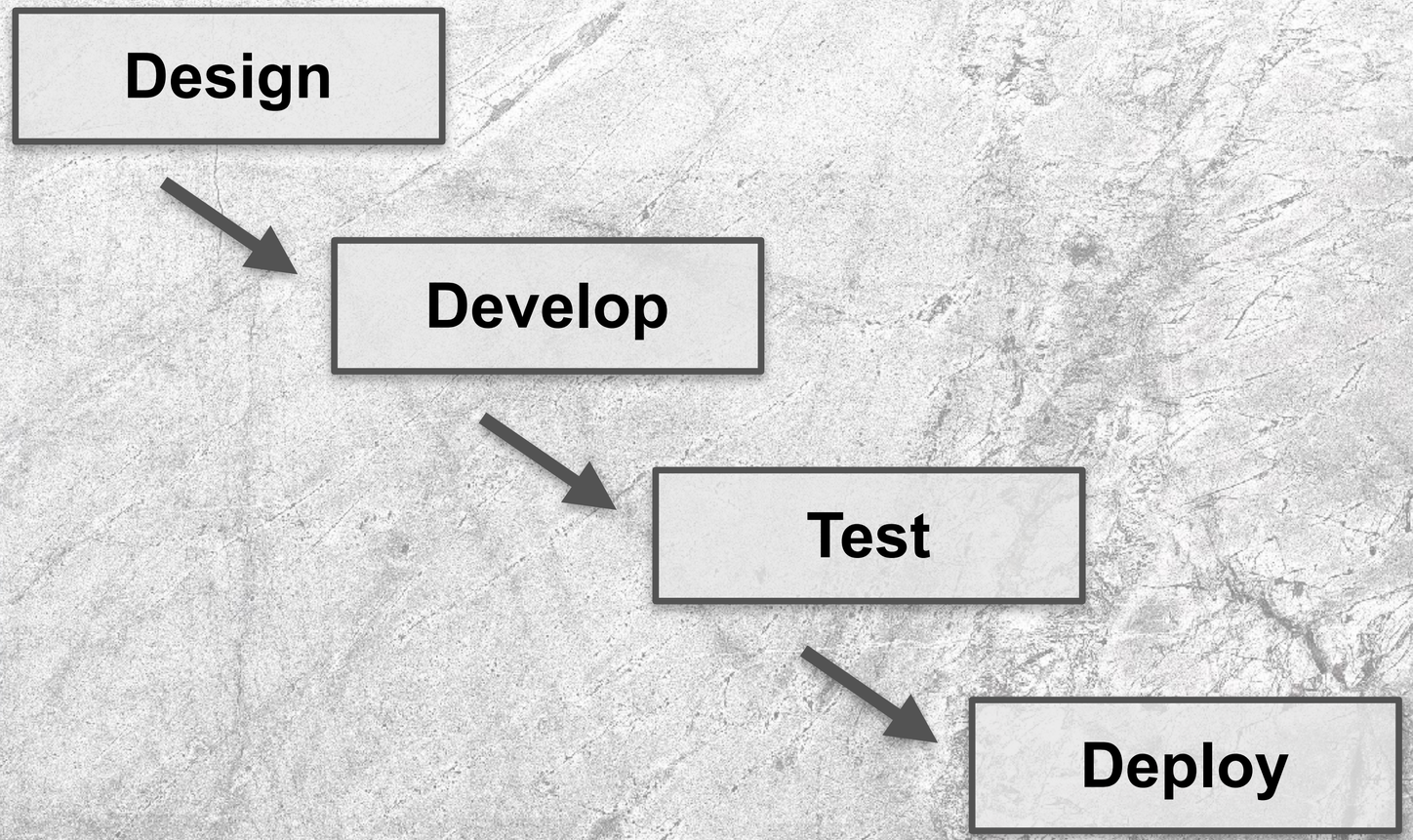
Waterfall Development



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Agile Development

Our highest priority is to satisfy the customer through early and continuous delivery of valuable software. 1	Welcome changing requirements, even late in development. Agile processes harness change for the customer's competitive advantage. 2	Deliver working software frequently, from a couple of weeks to a couple of months, with a preference to the shorter timescale. 3	Business people and developers must work together daily throughout the project. 4
Build projects around motivated individuals. Give them the environment and support they need, and trust them to get the job done. 5	The most efficient and effective method of conveying information to and within a development team is face-to-face conversation. 6	Working software is the primary measure of progress. 7	Agile processes promote sustainable development. The sponsors, developers, and users should be able to maintain a constant pace indefinitely. 8
Continuous attention to technical excellence and good design enhances agility. 9	Simplicity–the art of maximizing the amount of work not done–is essential. 10	The best architectures, requirements, and designs emerge from self-organizing teams. 11	At regular intervals, the team reflects on how to become more effective, then tunes and adjusts its behavior accordingly. 12

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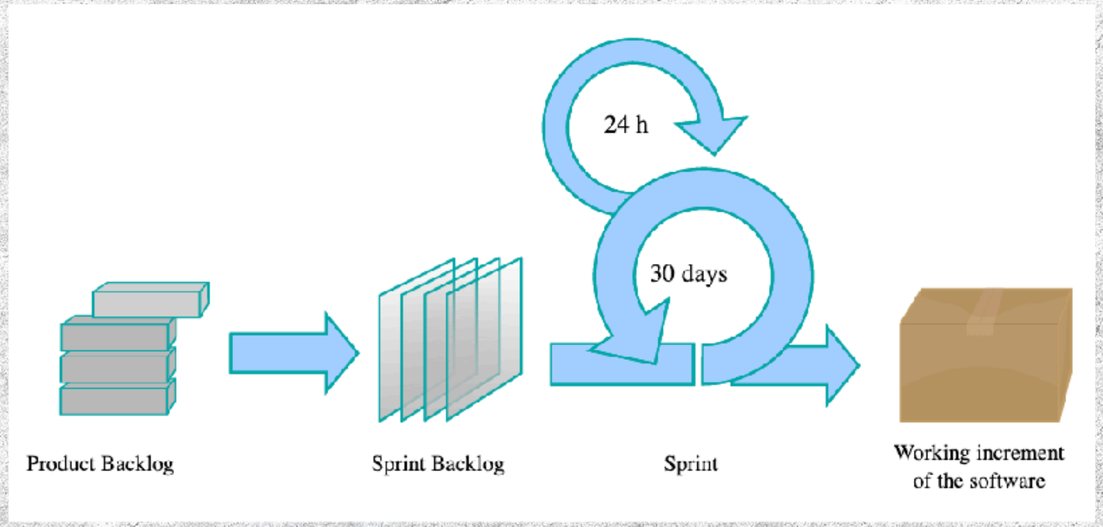
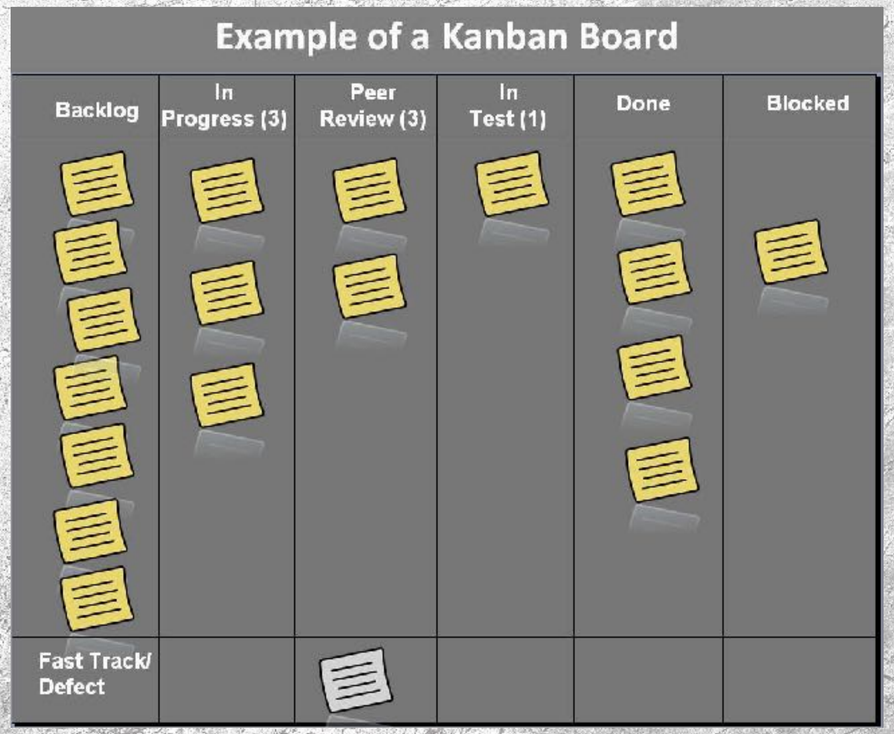
Scrum



Scrum process

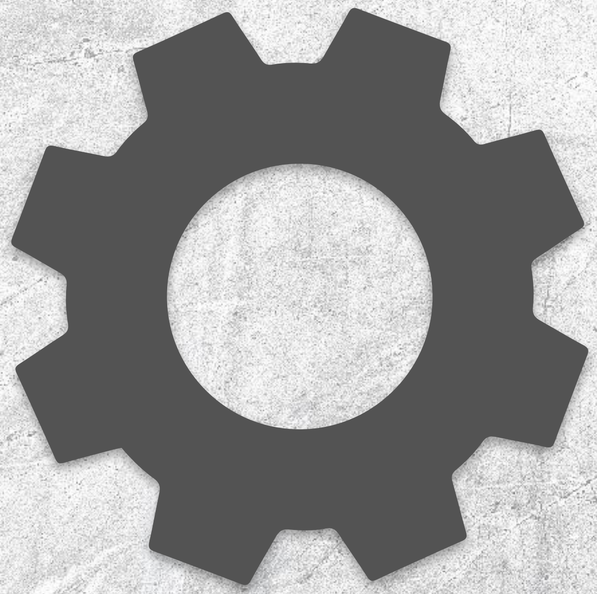
Kanban

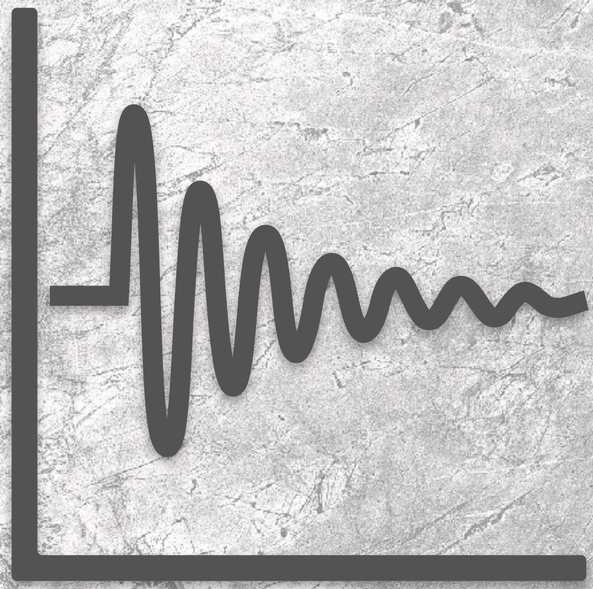


Kanban Board

https://en.wikipedia.org/wiki/Scrum_%28software_development%29
https://en.wikipedia.org/wiki/Kanban_board

Hardware and Software





leadtime
costs
tools
certifications

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Principles of Prototyping

> *“*
>
> *The overarching purpose of any form of prototype is to learn something at a much lower cost in terms of time and effort than building out a product.*
>
> **Marty Cagan. Inspired (p.227)**

Prototyping Technics

- Feasibility Prototypes
- User Prototypes
- Live-Data Prototypes
- Hybrid Prototypes

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Testing Prototypes: Gita Example

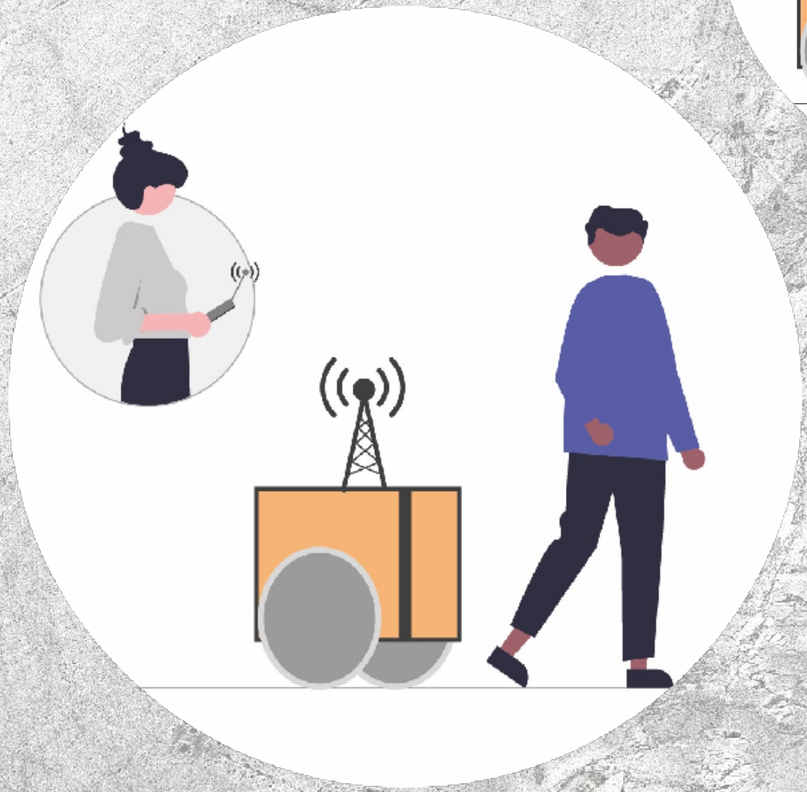
released product

Testing Prototypes: Gita Example

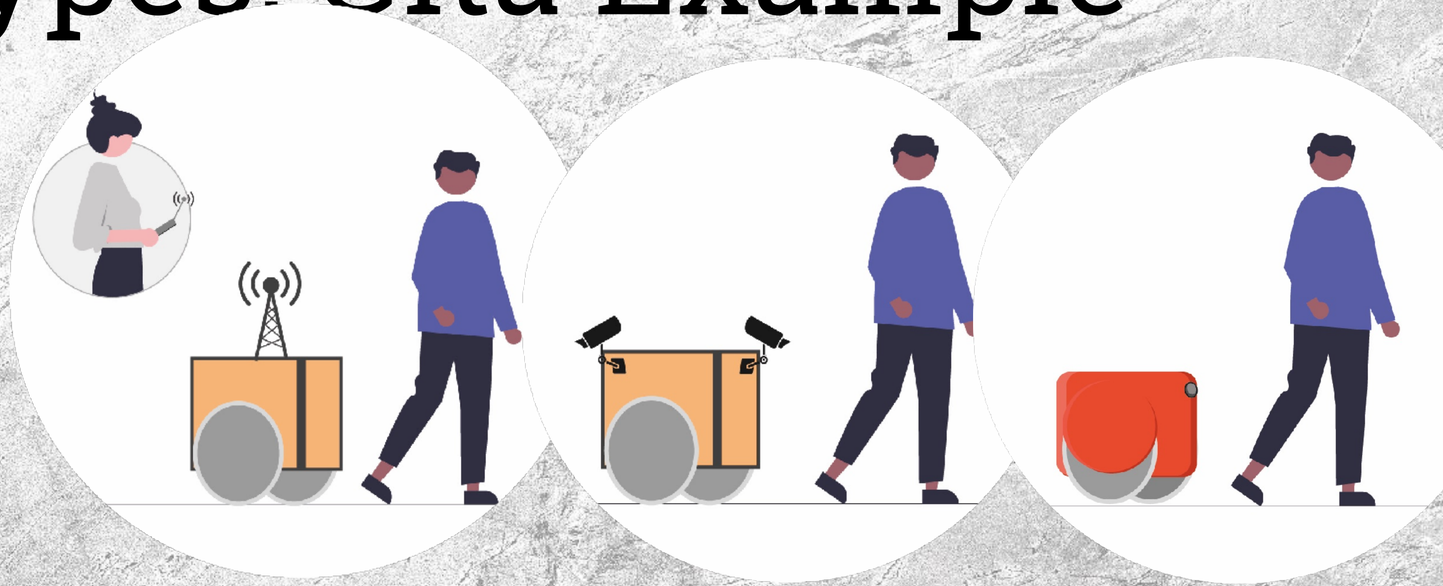
autonomous device

Testing Prototypes: Gita Example

remotely controlled ‘device’



Testing Prototypes: Gita Example



a suitcase following around

Testing Prototypes: Gita Example

someone with a bag following around

Gita Potential Prototypes

Low risk & effort

high risk & effort

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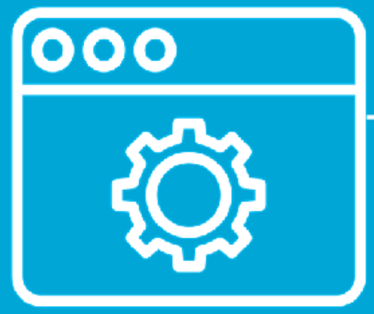

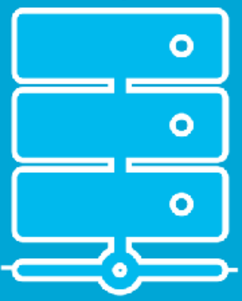

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Module 6 Development

By Jacky Bourgeois

- What are the key elements of Extreme Programming?
- What is version control?

Extreme Programming

> *“*
>
> *XP is a lightweight methodology for small to medium sized teams developing software in the face of vague or rapidly changing requirements.*
>
> **Kent Beck**

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Testing

Test-Driven Development

Create a Customer Object with email, first_name and last name

Create a PreOrder Object with number_products, size and colour

Check Customer email is valid

Check ID and order_time and generated properly

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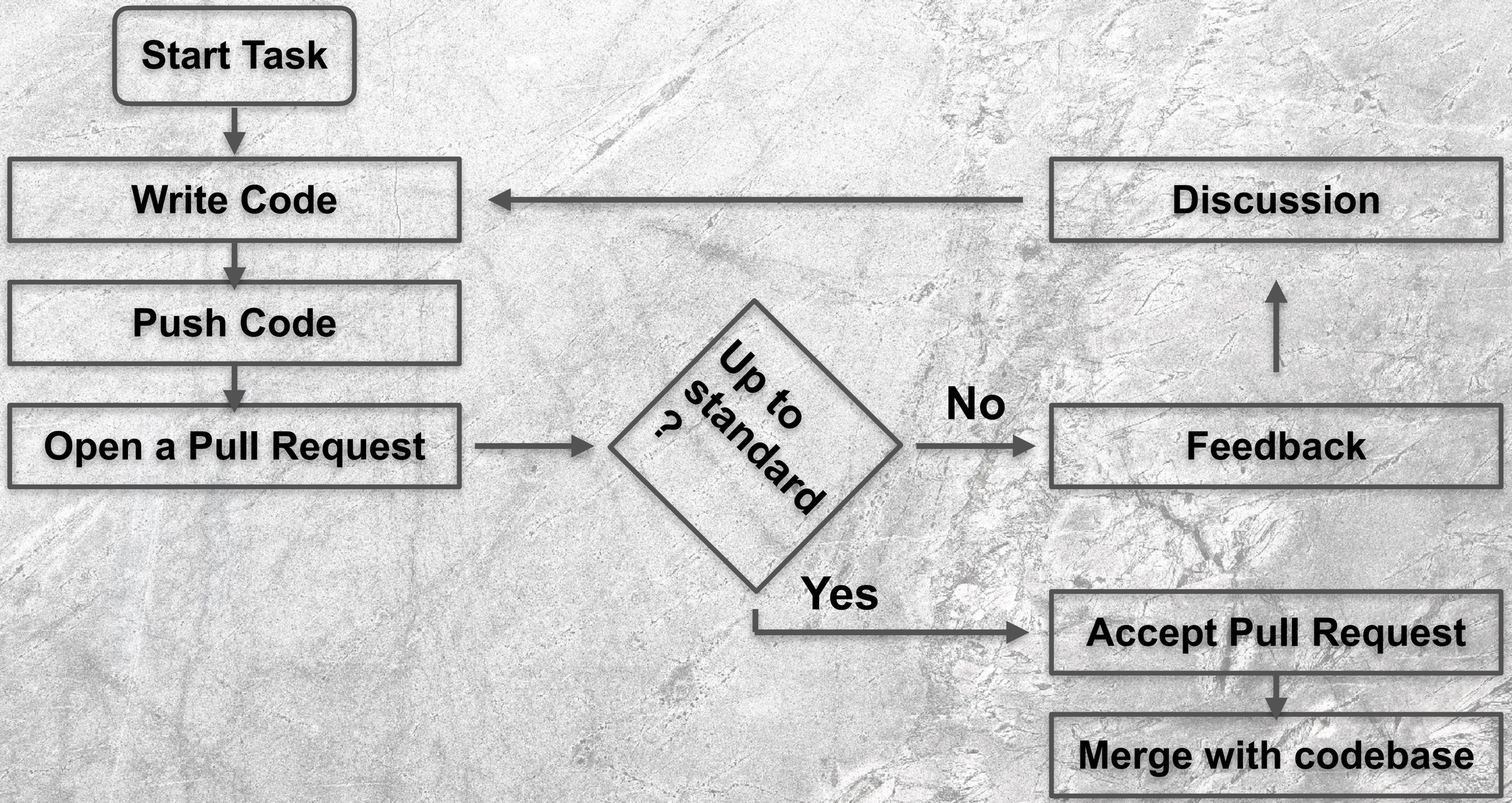
Code Review



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Pair Programming

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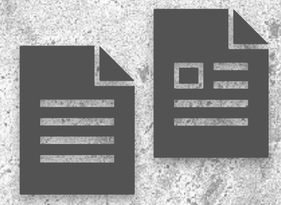
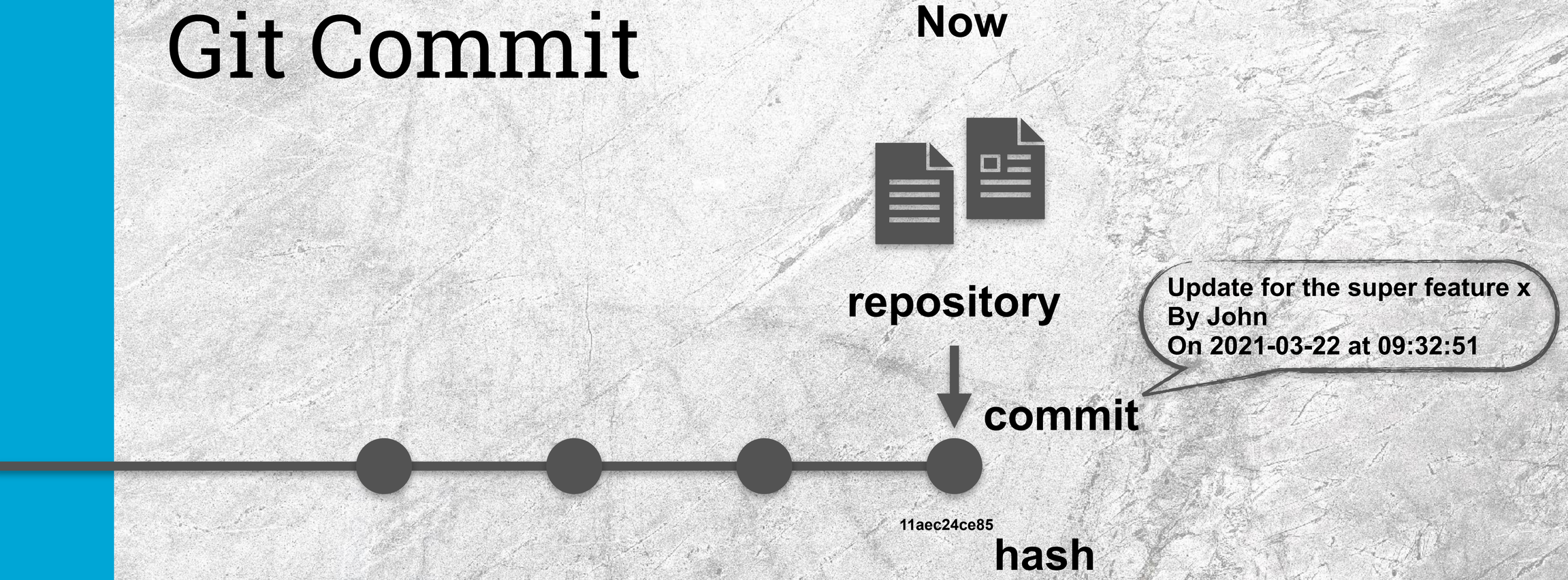
Version Control System



repository

Git Commit



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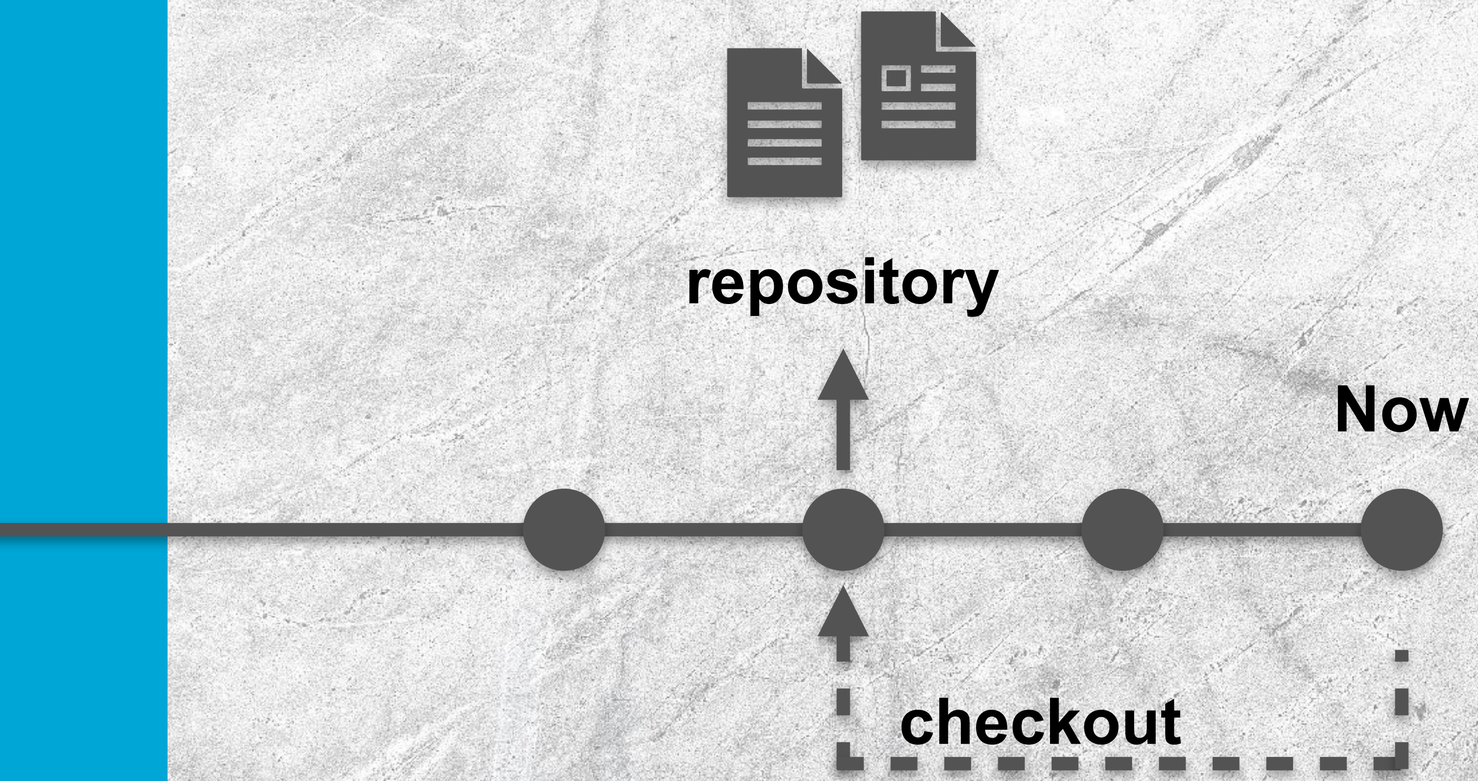
Git Checkout



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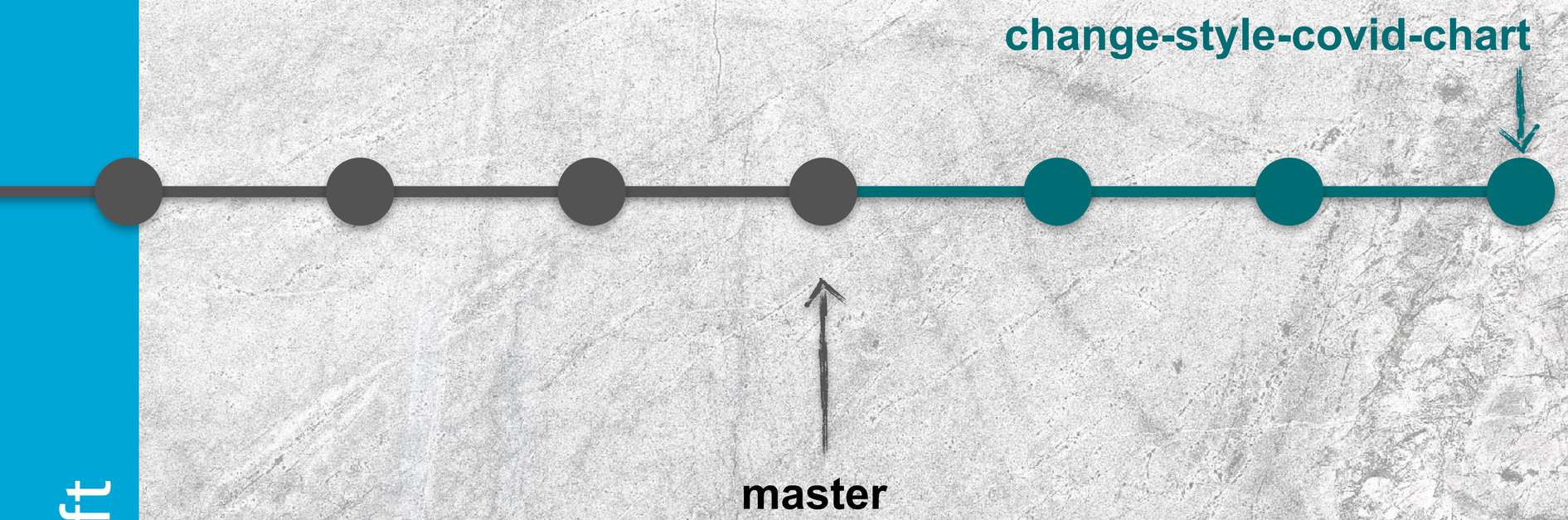
Git Branches



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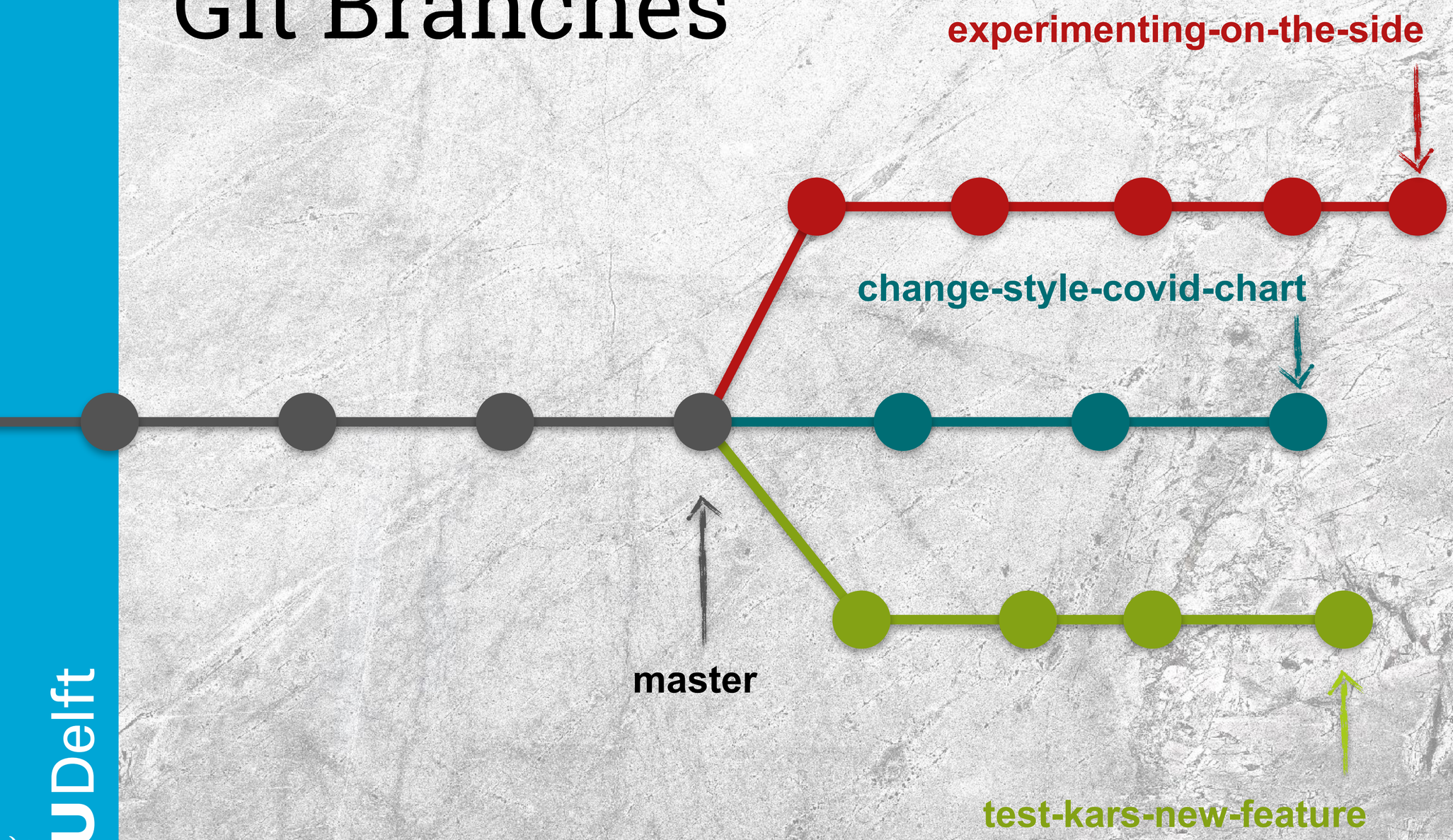

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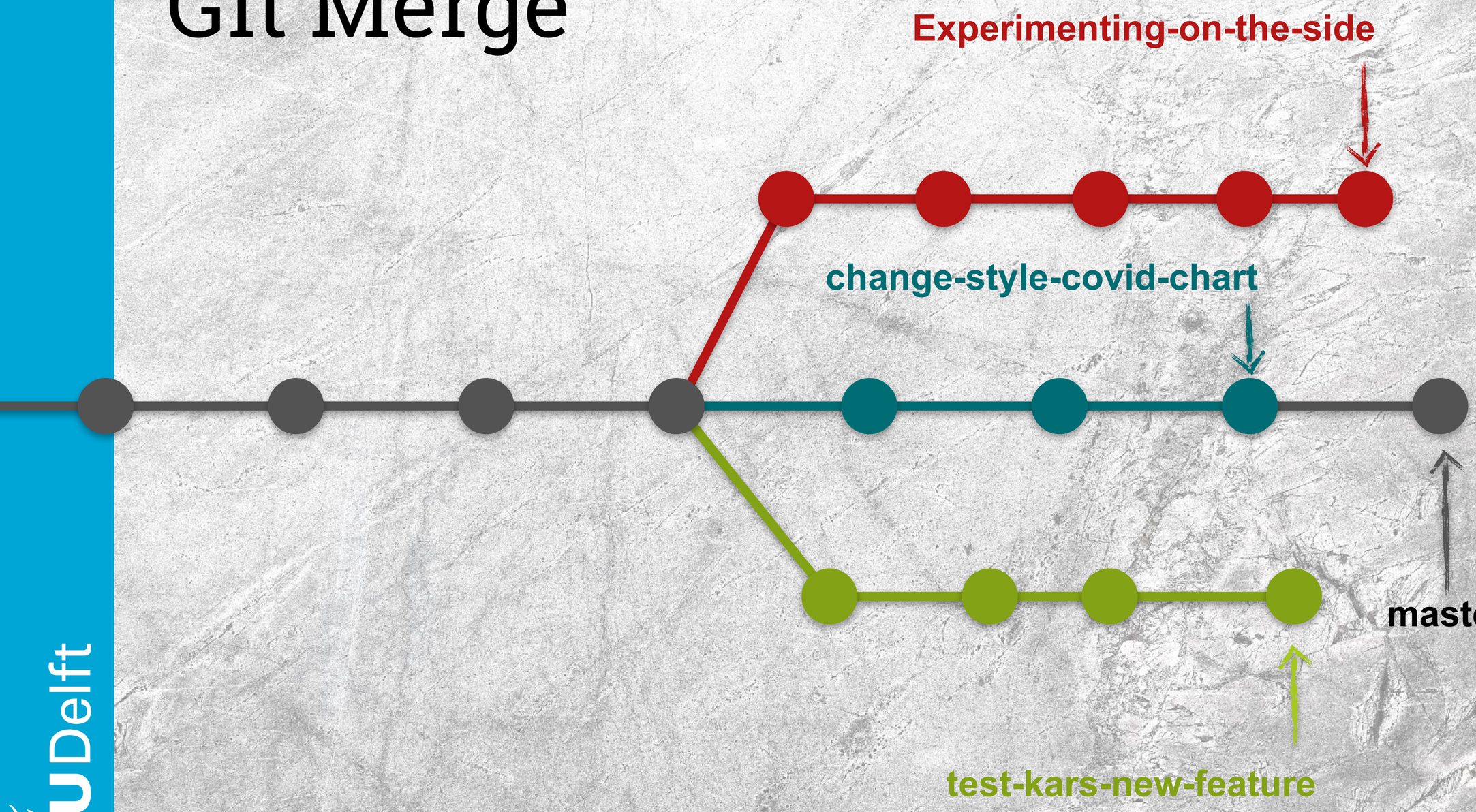
Git Merge



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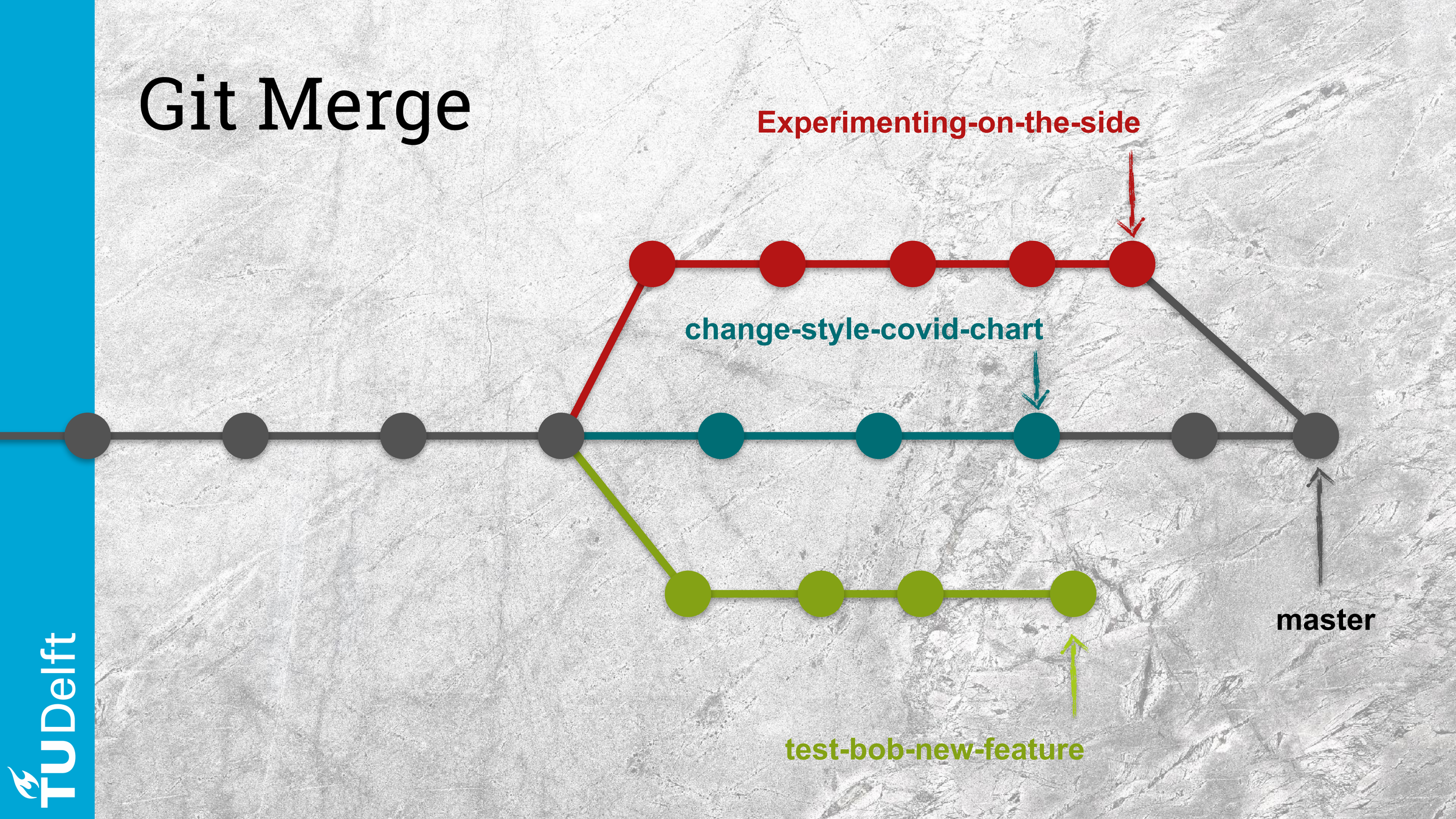

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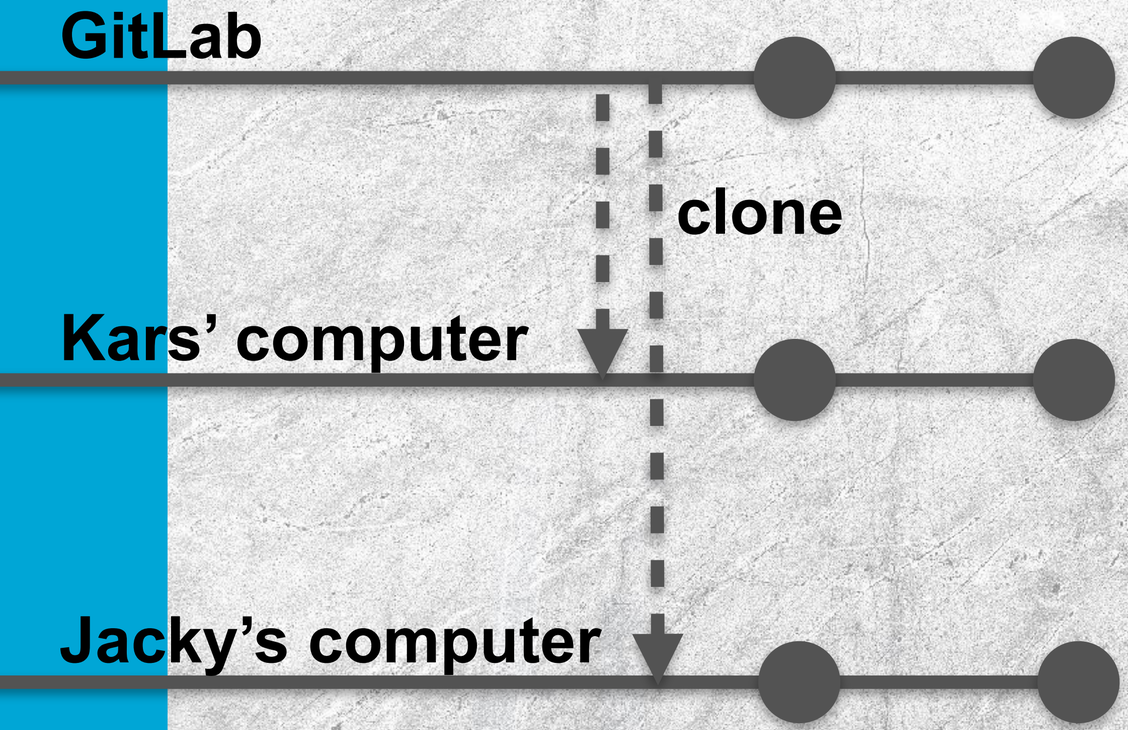
Git Remote



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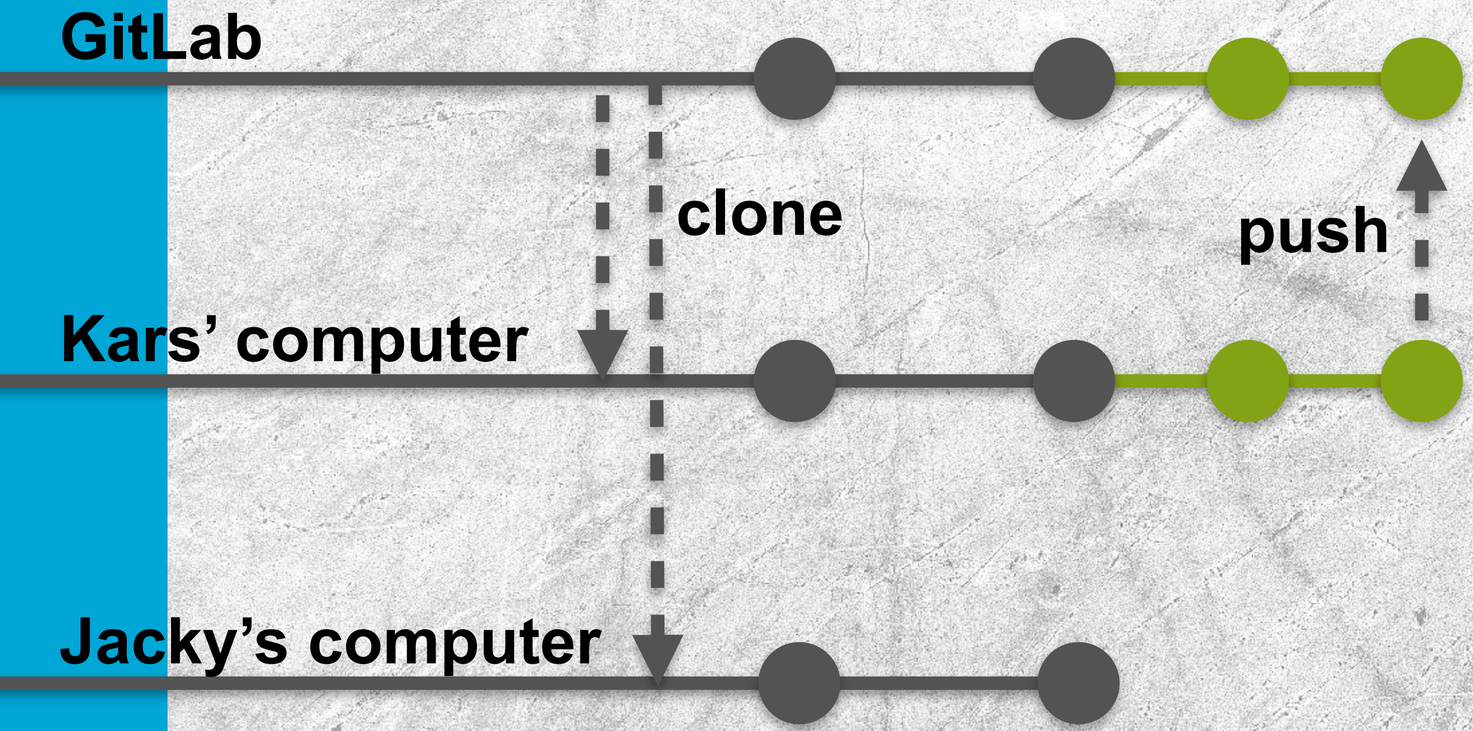

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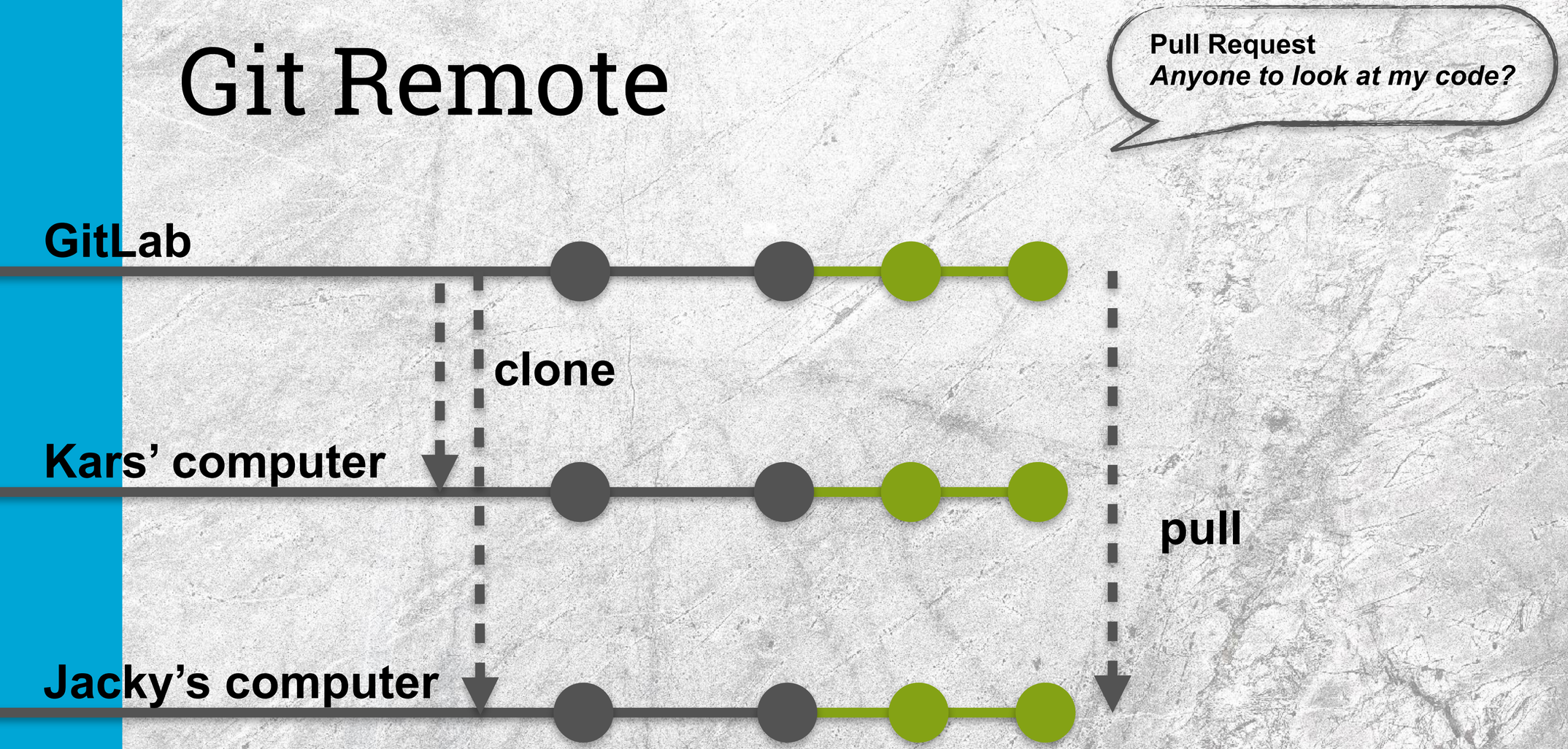

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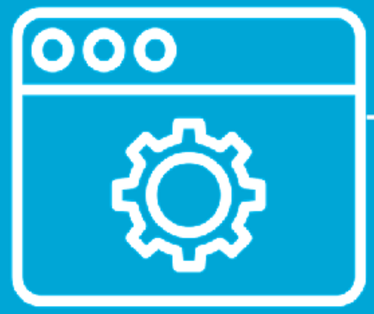

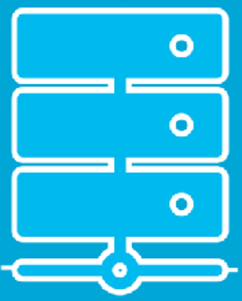

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