TIMING IN THE TECHNOLOGY VALUE STREAM

CSD-380 Assignment 1.2

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AGENDA

LEAD TIME VS. PROCESSING TIME

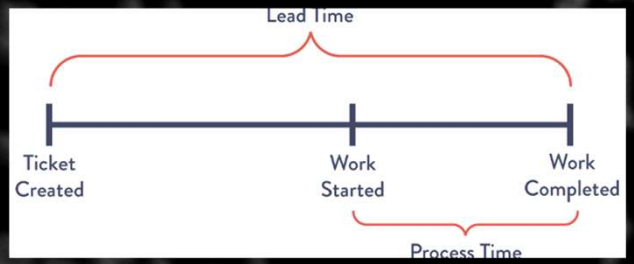
LONG LEAD TIMES (MONTHS)

SHORT LEAD TIMES (MINUTES)

REFERENCES

LEAD TIME VS. PROCESSING TIME

Definitions



LEAD AND PROCESSING TIME DEFINED

- **Lead Time:**
  - The time from a request being made to when it is fulfilled
  - Reflects the customer's experience
- **Processing Time**:
  - The time from starting to finishing work on a request
  - Does not include time in the queue

Another common definition of lead time is the time between committing code to the codebase and that code actually being deployable.

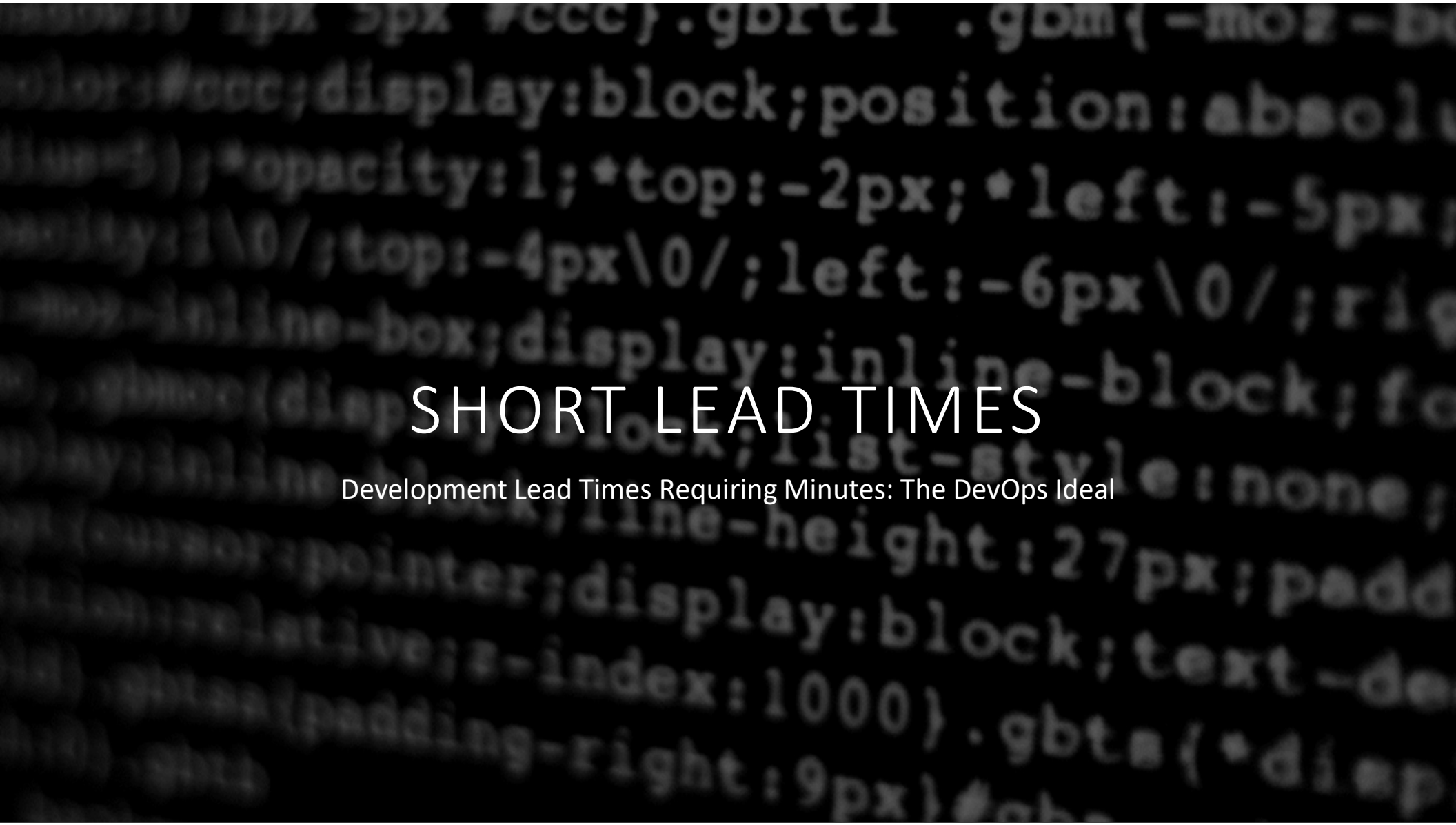
LONG LEAD TIMES

Development Lead Times Requiring Months: An Unfortunately Common Reality

LONG LEAD TIMES

A value stream with lead times measuring in months likely includes some or all of these contributing factors:

Factor	Impacts
Tight coupling within the system	Merging the changes together results in code that no longer builds correctly and/or cannot pass the established tests
A lack of integration test environments	Teams must wait for access to shared environments, delaying testing and validation
High reliance on manual testing	Testing takes significantly longer and is error-prone
Multiple (and/or complex) approval processes	Changes are delayed in review queues, increasing wait times, often in ways unrelated to the risk of the change


SHORT LEAD TIMES
Development Lead Times Requiring Minutes: The DevOps Ideal

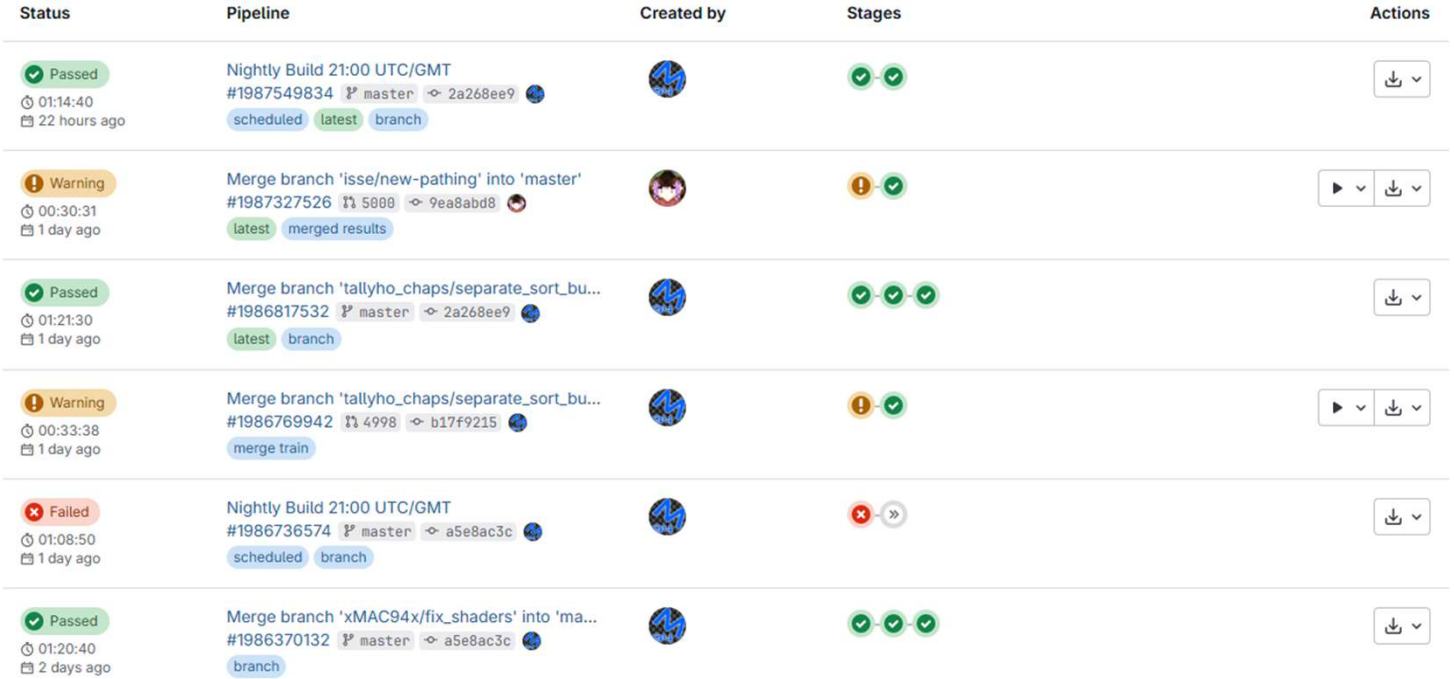
SHORT LEAD TIMES

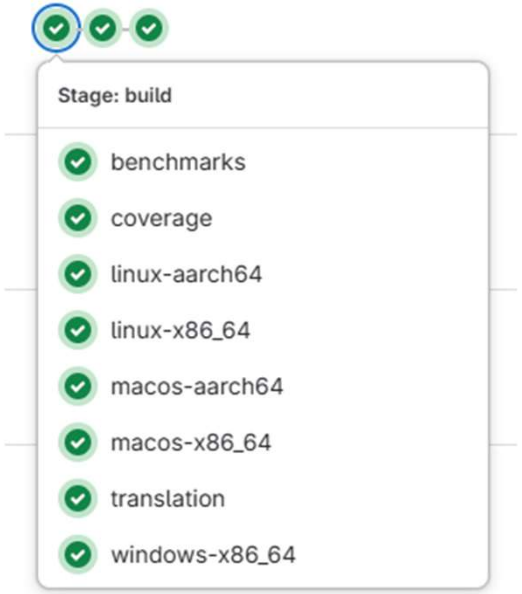
In an ideal DevOps environment…

- Feedback is provided to developers quickly and consistently
- Code changes are small and frequently check in to a version control repository
- Code is highly modular/decoupled and well encapsulated
- Testing is automated when possible
- Approval processes are simple and streamlined, perhaps with some portions automated

With these concepts implemented, lead time can become something measured in hours or even minutes, and when problems do occur within the code the impact is small rather than system-wide.

EXAMPLE WITH GITLAB





This is an example of the Veloren CI/CD pipeline on GitLab. The stages include a number of automated tests that are run whenever code changes are submitted to the codebase, making it easy to track changes and their impacts.

REFERENCES

Bigelow, S.J. (2023, February 6). *What is value stream management?* TechTarget. https://www.techtarget.com/searchcio/definition/value-stream-management

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