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Praktikum Software Engineering

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Unit 2 – CircleCI + Java Implementation
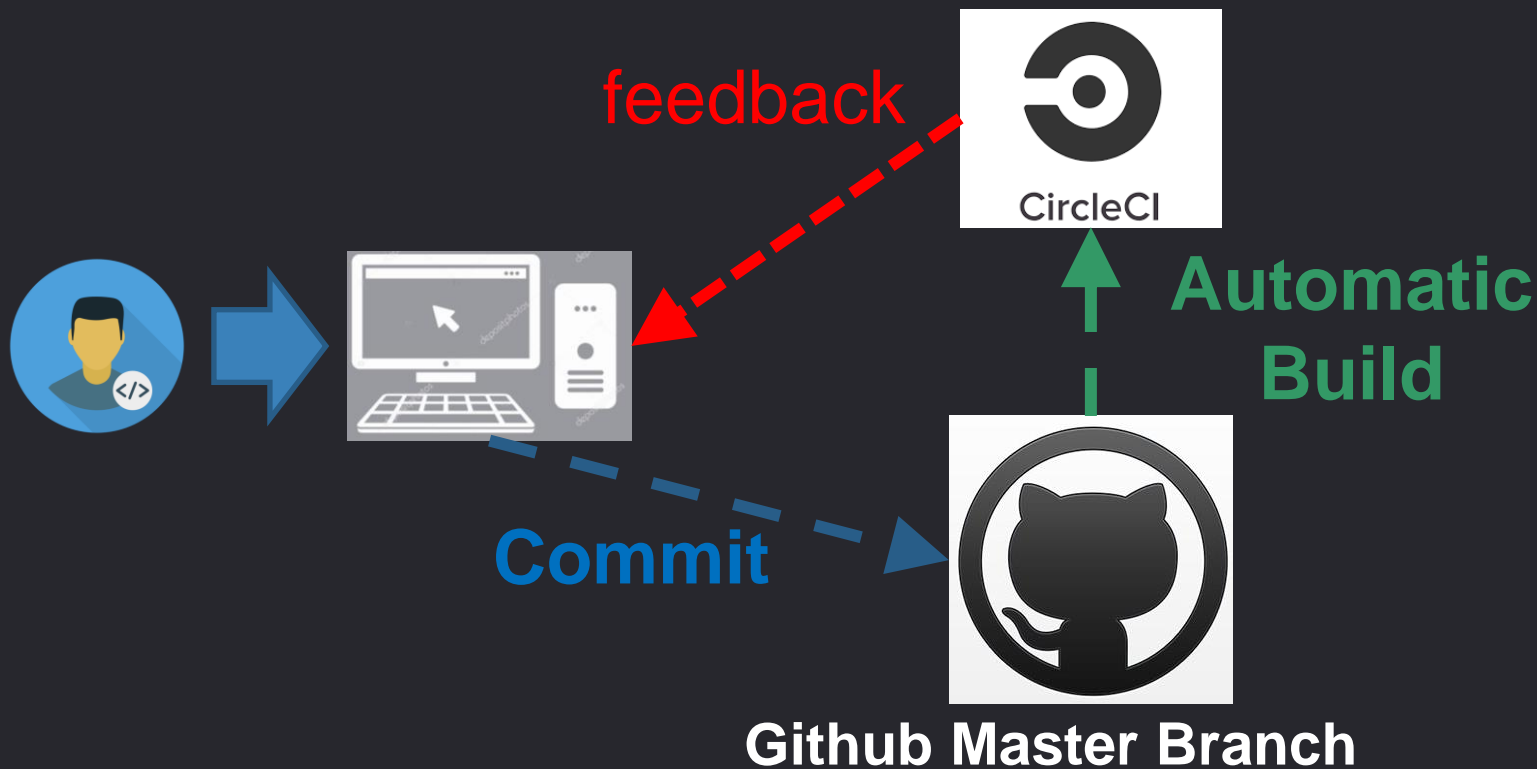
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Agenda

- **CircleCI**
  - Demo
- **Java**
  - DOM Parser
  - Stax Parser
  - Demo

CircleCI

- **Continuous Integration (CI) definition:**
  CI is a software development practice wherein developers regularly merge their code with a central repository after which automated builds and tests are run.

- **This means that CI tools offer the possibility to automatically compile and test the code as soon as it is committed to a repository.**

⚠ **CircleCI is not a testing tool!**

Basic Workflow of CircleCI

CircleCI Config Example

```
version: 2
jobs:
  build:            Folder in which we are going to
                    install the Docker image

    working_directory: ~/at.jku.se.prse.example.calculator

    docker:
      - image: circleci/openjdk:8-jdk-browsers

    steps:

      - checkout    Copy the branch into the folder

      - run: mvn clean verify    Maven run command

      - store_test_results:
          path: /home/circleci/at.jku.se.prse.example.calculator/at.jku.se.prse.example.calculator/target/surefire-reports

      - store_artifacts:
          path: /home/circleci/at.jku.se.prse.example.calculator/at.jku.se.prse.example.calculator/target/
```

CircleCI

- **Demo**
  - https://github.com/jku-win-se/teaching-2021.prse.circleci.example

- **DOM Parser**
  - Entire document is read into memory

- **Why Stax?**
  - Small memory footprint and is typically much faster

- **Java Architecture for XML Binding (JAXB)**
  - The ability to *marshal* Java objects into XML and the inverse
  - Works on top of the parser

Java Stax + JAXBContext

- **Demo**
  - https://github.com/jku-win-se/teaching.teaching-2021.prse.xml.parser.example

Bibliography

- **Java + XML**
    - https://www.vogella.com/tutorials/JavaXML/article.html

- **Java + Stax + JAXB**
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    - https://www.journaldev.com/1191/java-stax-parser-example-read-xml-file
    - https://dzone.com/articles/handle-middle-xml-document
    - https://wiki.eclipse.org/EclipseLink/Examples/MOXy/GettingStarted