High-level Modeling and Low-level Adaptation of Serverless Function Choreographies

Benjamin Walch

Supervisor: Sashko Ristov

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Contents

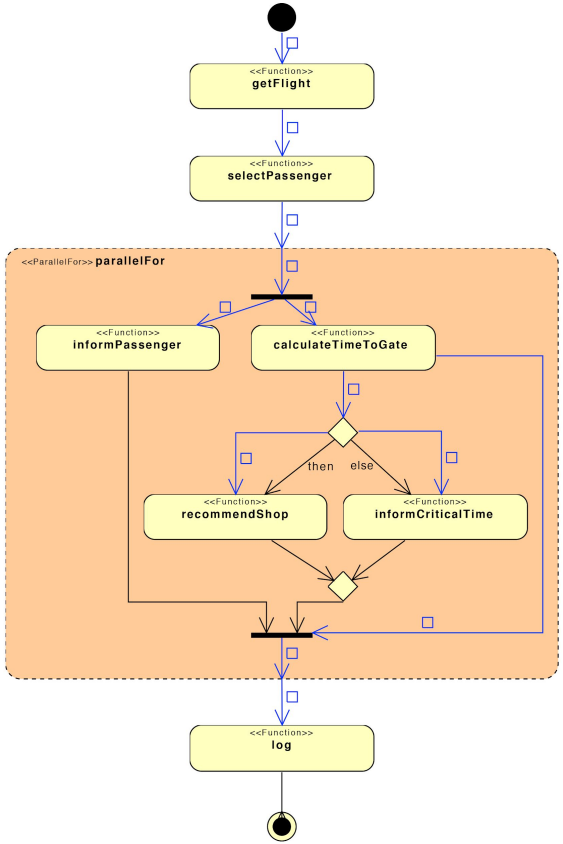
Introduction

- Workflows and Functions
- DPS Research
    - Develop code once, reuse it later

Problem

- Creating Workflows not trivial
- Workflow Definitions are different on different providers
- Execution Limits / Quotas are different on different providers
- Function Language Support is different on different providers

Example



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Goal

- High level workflow modeling

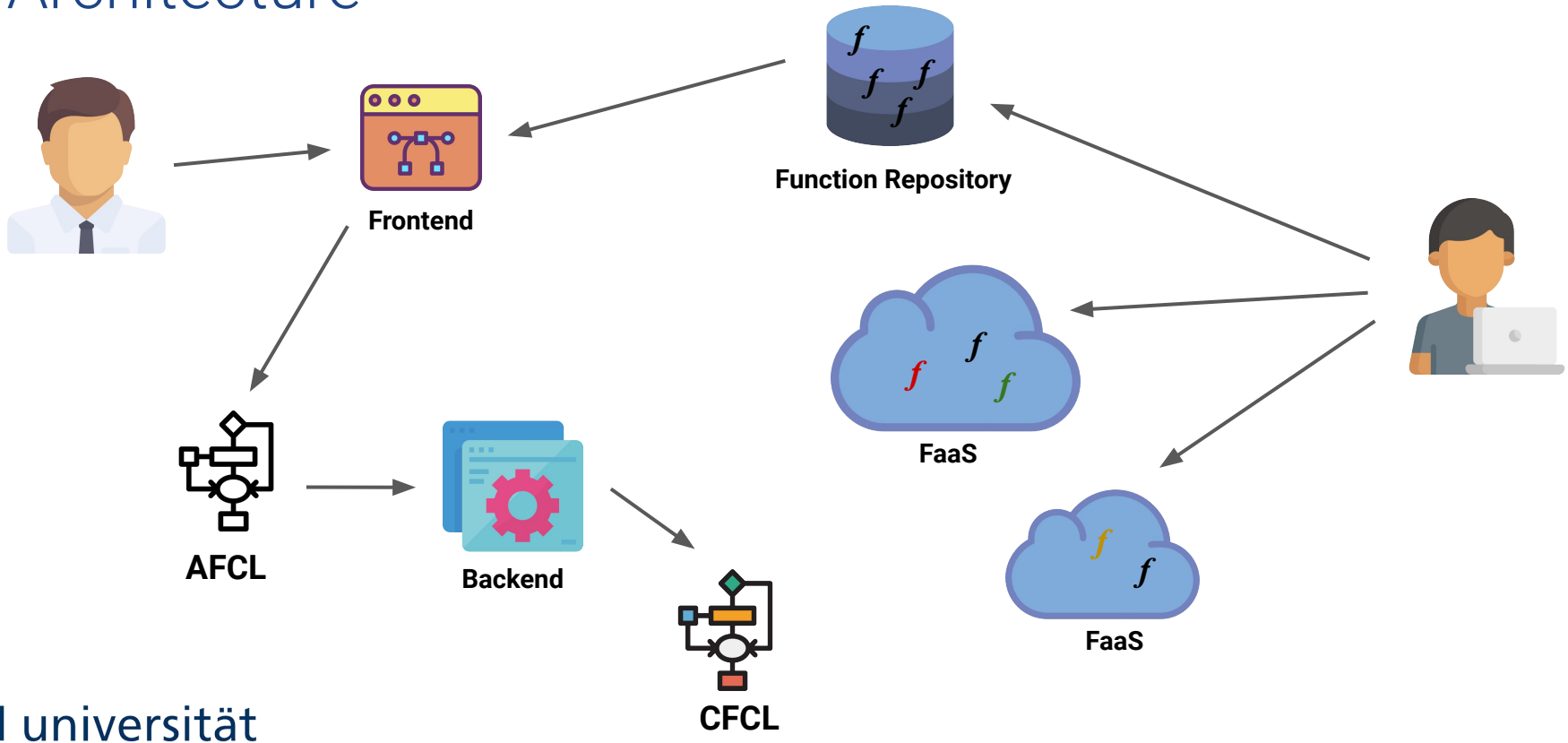
- Low-level adaptation and optimisation based on the enactment engine where the workflow is executed

- assumption: The developer has already developed and deployed functions

Architecture

- Frontend: GUI
  - for modeling and composition of Workflows
  - for visualization of existing Workflows
- Backend: Conversion and Optimization
  - for converting AFCL to specific CFCL
  - for optimizing Workflows

Architecture



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Icons made by Smashicons

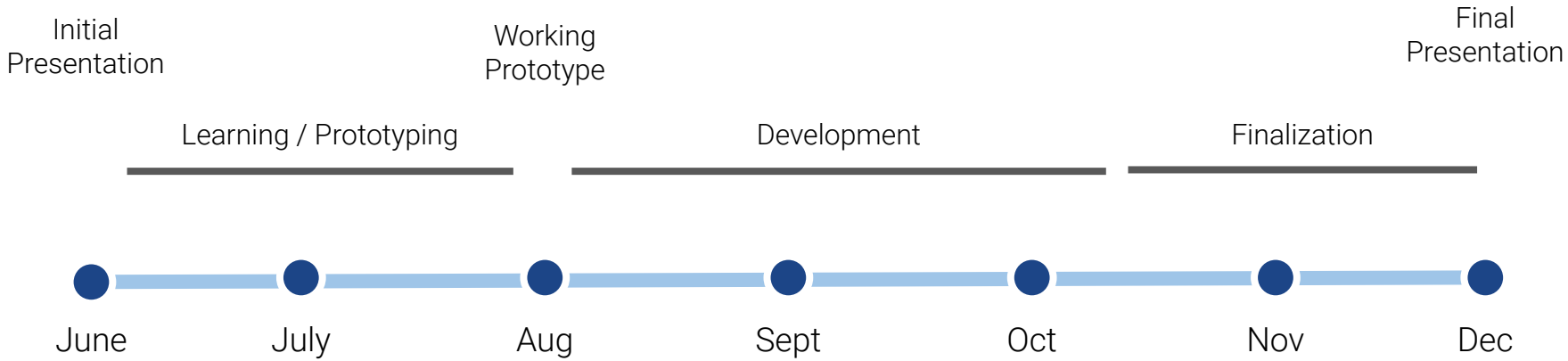
Benefits

- Composition of Workflows possible without being a programmer
- Better understanding and learning of Workflows through Visualization
- Workflow execution Flexibility
- Workflow Optimizations

Methods / Techniques

- Core Application: Java / Python / Bash / PHP
- Persistence: MySQL
- Frontend: Web based - JavaScript / React / CSS3
- API: AFCL API

Time plan



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Thank you for your attention