This document [CM-W-M2G] provides an overview of the Microservice2Go (M2Go) practical material used by the research group Cooperation & Management (C&M) as part of its practical course offered in parallel to the lecture "Web Applications and Service-Oriented Architecture" (WASA). A comprise introduction to the programming language Golang (Go) is followed by the use of this programming language to implement microservices which are designed according to C&M’s microservice engineering approach. The practical material consists of three parts as illustrated by Figure 1.

- **C&M Org:** All participants of the M2Go practical course must observe a few rules which exist at C&M to ease the cooperation between its members.

- **Golang:** This part provides a concise and practical introduction to the Go programming language. This includes the installation of the needed environment to code and run Go programs. Besides the well-known program "Hello World" some of the central Go language elements are investigated with the example of a more complex Go program CarRental and an advanced Go program CarRentalCLI.

- **Microservice Engineering:** In the following part, Go is used as the programming language to implement microservices from the Proof of Concept (PoC) BestRentalPoC. C&M’s Unified Microservice Engineering (UME) approach introduces specific analysis and design artifacts which build the basis for the Go-based microservice implementation.
• **Identity and Access Management**: The last part is concerned with the relevant cross-cutting concern of Identity and Access Management (IAM). The access management includes the authentication and authorization of human and technical subjects who need access to the BestRentalPoC applications and their functions and data. Specific IAM topics investigated in this part are decentralized identities and fine-grained authorization.

The first three parts (C&M Org, Golang, and Microservice Engineering) belong to the practical course offered in parallel to the lecture WASA1 which is held each winter semester. Figure 2 illustrates the chronological integration of the M2G parts into the overall WASA1 lecture schedule.

![Figure 2: WASA1_M2Go Schedule](image)

With the submission of Part 1 “C&M Org”, the onboarding of the M2GoParticipants is finished. The submission of Part 2 “Golang” is shortly before the New Year Break. The time after the New Year Break is foreseen for Part 3 ”Microservice Engineering”. M2GoParticipants who do not need the whole practical time for completing Parts 1 to 3, will use the remaining time for a self-controlled practical phase in which a challenge derived from a current C&M research project is worked out by the M2GoParticipant.
1 Bibliography

[CM-W-M2G] Cooperation & Management: Microservice2Go, WASA-Praktikumsdokument, `\sccfs.scc.kit.edu\OE\TM\VR\Mitglieder\2-3.WASA_PracticalMaterial`. 