Executive Summary Team 07 Project 1

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Introduction

- In this project, we are developing a software that can control and schedule the movement of two cooperate elevators in a three-floor building according to people’s need.
- By providing interconnected interfaces to passengers outside and inside the elevators, the system can provide security guarantees and work efficiently.

Our Design

the basic requirement for the elevator:

- Open/close door according to users' needs
- bring user to his/her taget floor

decision-making system && system processor

- all signals should be handled by the system processor
- give information to UI
- two elevator works indepandently
    - one failure may not affect the other
- the system should be user-friendly
- the system should work efficiently and safely

the system should be user-friendly

- easy to access
- good location
- provide currect information !!!
    - InternalUI should be consistent with ExternalUI
    - systemUI should be consistent with the real state
- efficiency
- safety

efficiency

- optimal solution for common case (e.g. compared to walking upstairs/downstairs)
- shedule the two elevator to meets the users' needs as fast as possible
- energy cost (`least significant`)

safety

- user safety
  - alarm button
  - monitor system
- "hardware" safety (or safe control)
  - safe moving speed
  - safe open time (without close button on)
  - safe maximum weight

- software safety
  - ban third party modification
  - software update
    - integrity
    - authentication
    - (confidentiality)

possible update

- adaptive model (collect data and update system)
    - may cause privacy concern

Our questions

- Is a database necessary?
- Is the part `software safety` necessary?

Our schedule

We have completed the basic requirement part, which you could find in our Gitlab repository, and we have been drawing the UML for development part then. After this consultation, we would start to develop our system via Python.

Thank You!