Duckiebot

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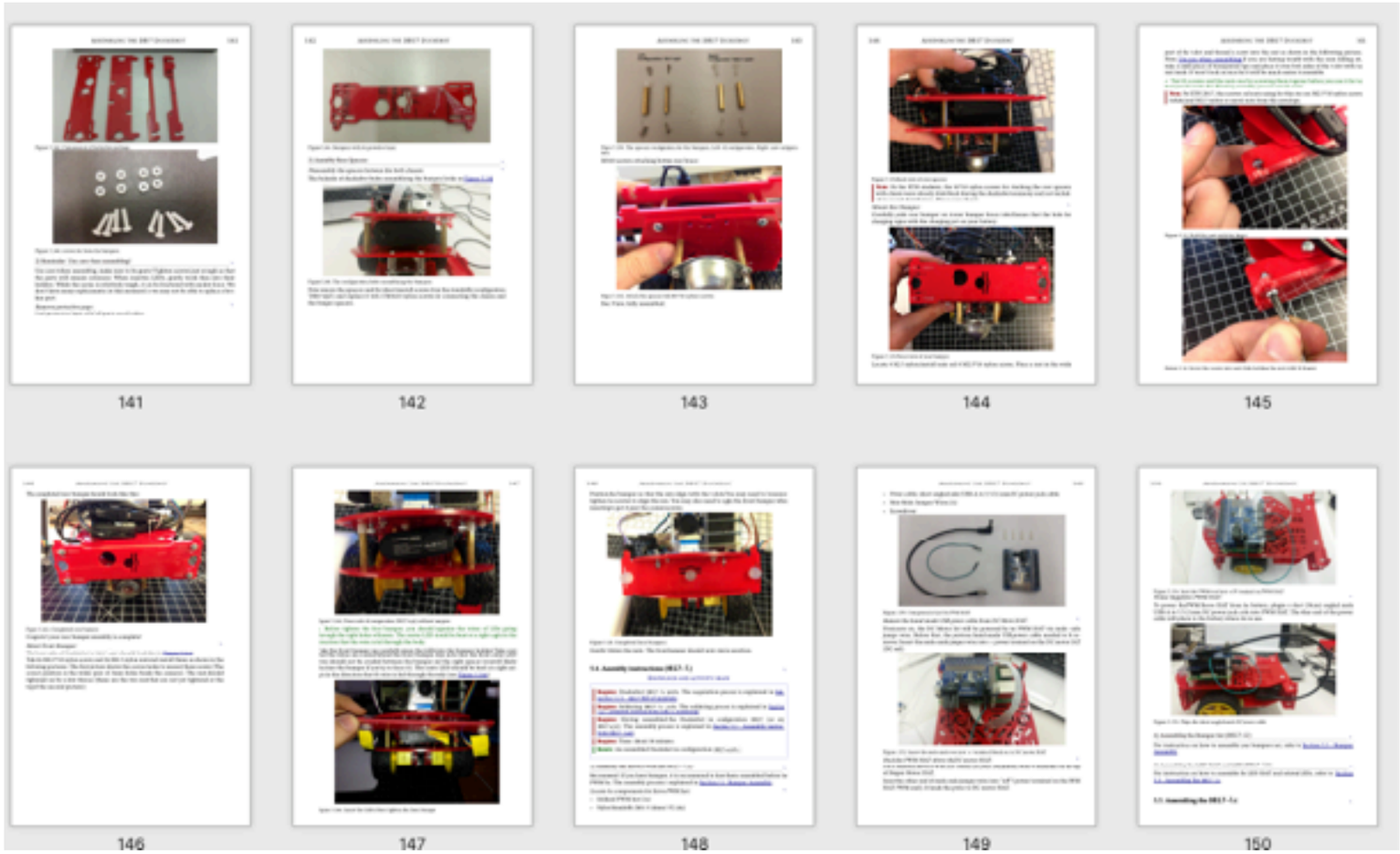
Assembly

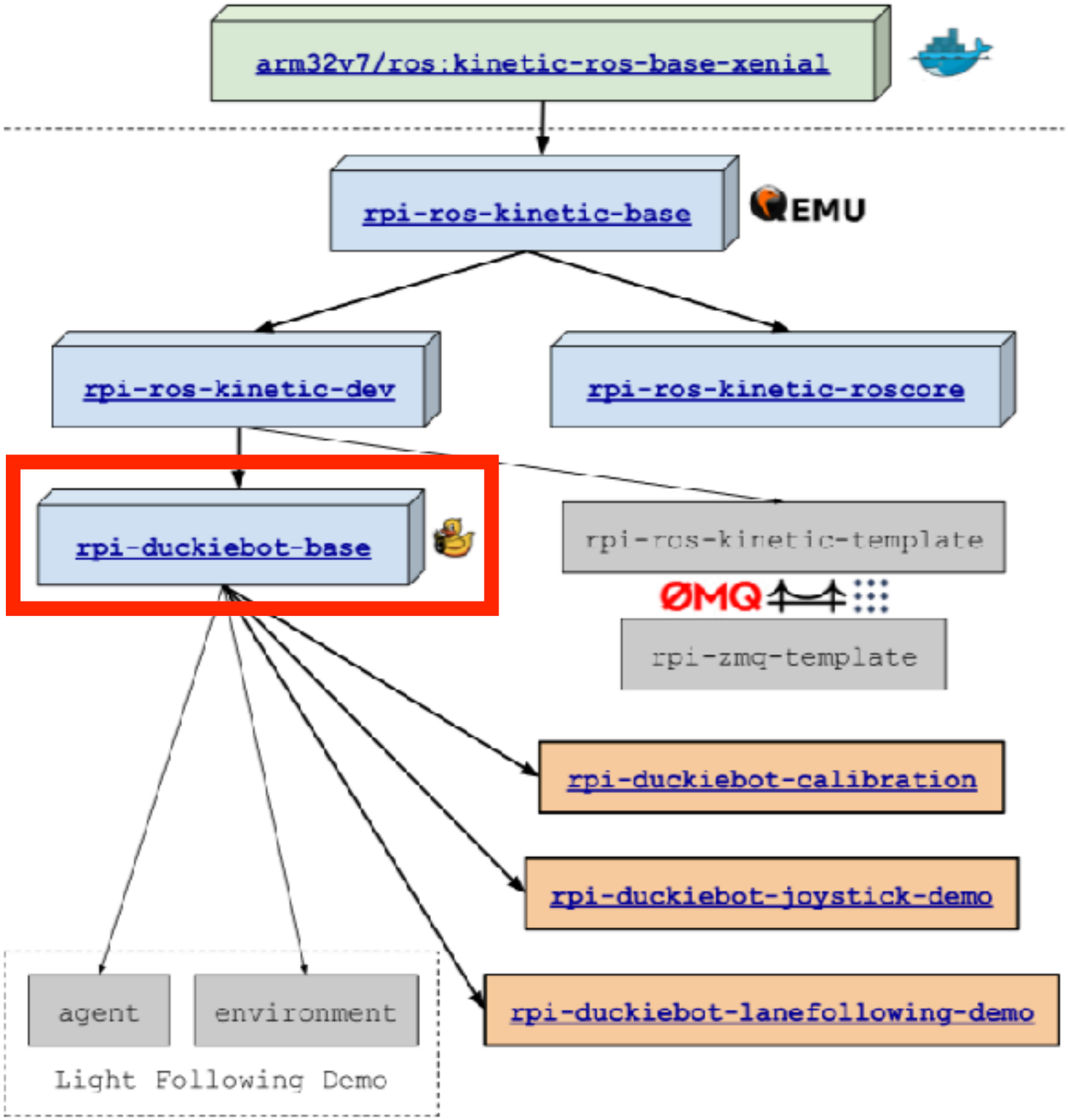
- 4-6 hours to assembly with instructions
- Some optional tools may help
- Instructions are provided from official documents



Software Architecture

- Host machine:
  - Virtual box VM with Ubuntu 18.04
  - duckietown shell
  - docker environment
- Duckiebot (Raspberry Pi)
  - ROS stack in docker images
  - Driver packages are provided
  - Demos
    - Calibration (camera/motor)
    - Lane following……

Docker Hierarchy



Current Progress

- Done
  - Setup VM environment
    - Docker
    - duckietown shell
    - SD card
  - Run camera and motor calibration
- TODO ?
  - Build docker images for labs
  - Write our own ROS package for students

Discussion

- High-level commands (duckietown shell)
- Not easy to debug code for beginners
- Materials
  - Robotic topics (CV/Lane filter/Motor control/ Motion planning)
- How/When to use the robot ?
  - Camera/WiFi/Motors/LEDs
- Course design

Note

- 資工探索(計概)
- 16個實驗/資工大一學生
  - 無programming
- 課前任務 3小時preview+小homework (個人)
  - 過了才能參加挑戰任務
- 任務挑戰(2人一組)
  - 30 minutes 課程討論
  - 2.5 hour 實作挑戰
    - 1.5 hour內完成金牌
    - 2.5 hour內完成銀牌... (80%學生可以完成)

Note

- 實驗要好玩
- 資工系領域課程
- 一週就是六小時
- 人數: 30人
- 助教:6人
- 二或四晚上 18:30-21:30
- 零件先玩，單獨控制components，最後一堂再組裝完全車

TODO

- 課程實驗設計Brainstorm
- Nick實驗室教材