Fingerprint Key-Lock System

July 11th, 2016

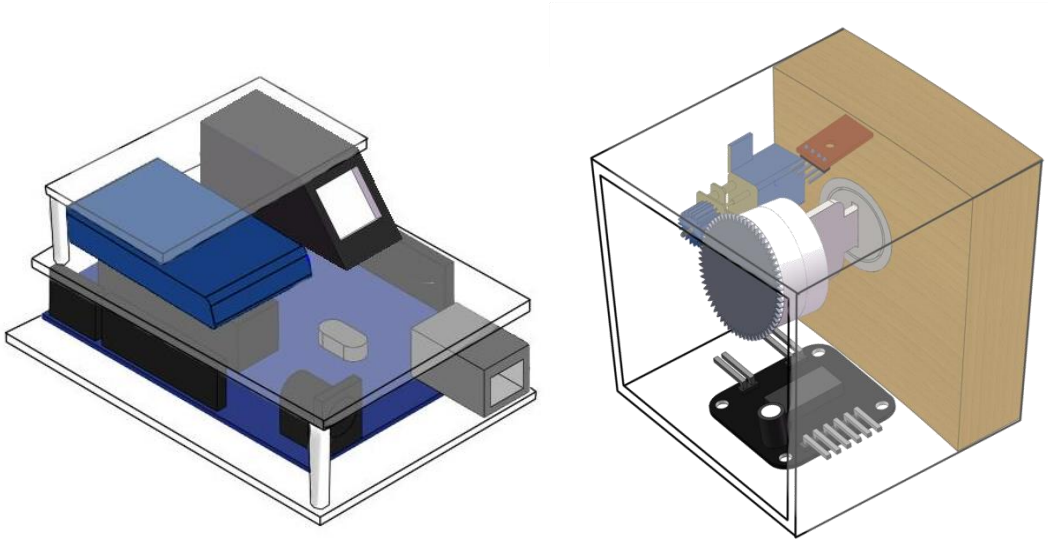


Figure 1. Prototype for the System

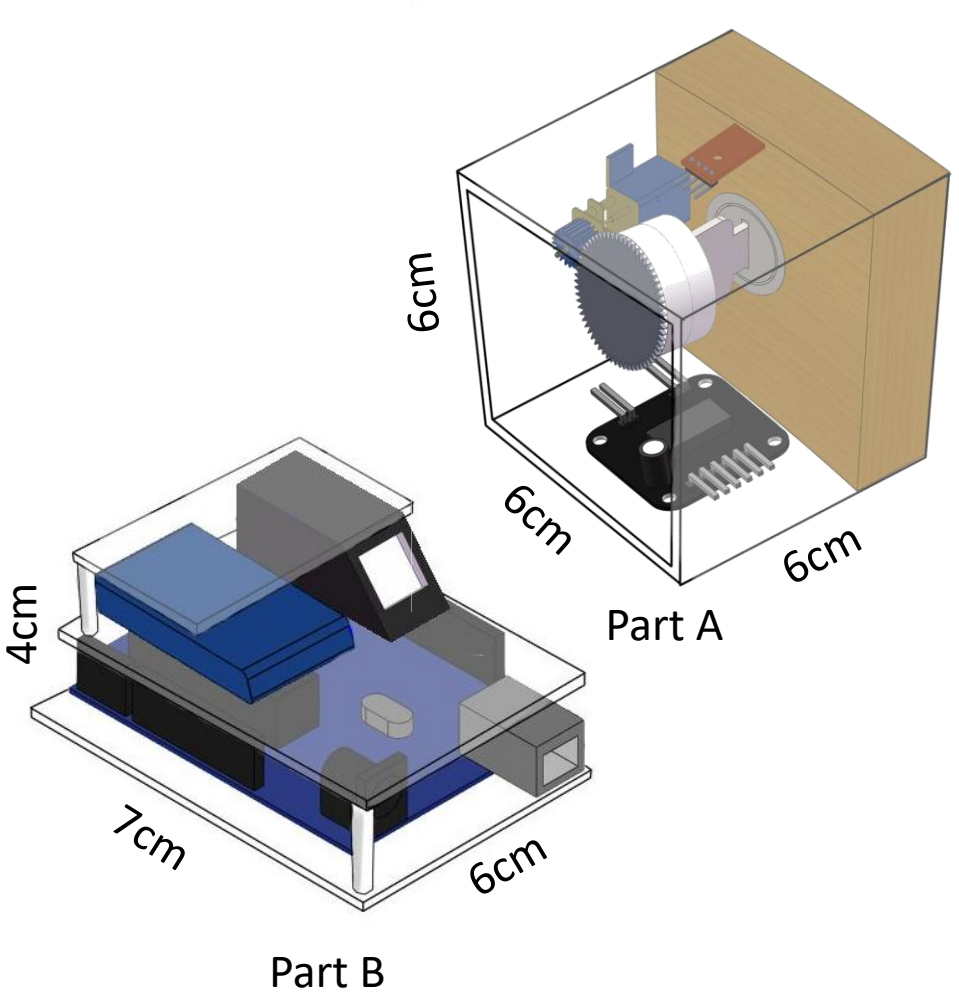
DELTA

Jiaxing Wang
Yuzhuo Wang
Cindy Zhou
Zhenhong Deng
Junchen Jin

Introduction

PRIMARY USER

PRIMARY USER



Exploded View I

- Part A
  - Key in the key mount
  - High-torque Motor & Gear System rotate the key.
  - EEPROM Memory (Electrically Erasable Programmable Read-Only Memory) & Motor Driving board assures security
  - Shell located on the lock

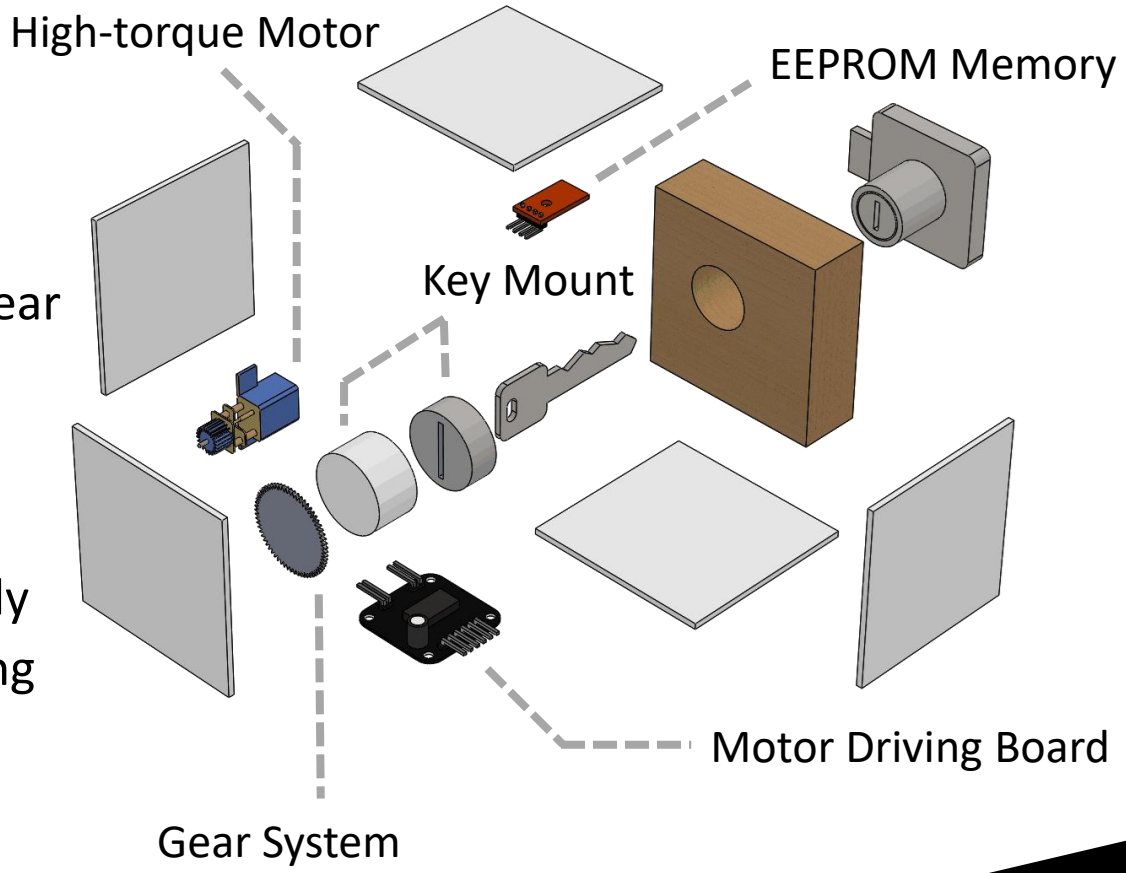


Figure 4. Exploded View for Part A

Exploded View II

- Part B
  - Battery

    Drive the motor/Arduino
  - Arduino Board

    Processor
  - Fingerprint sensor

    Scan fingerprint

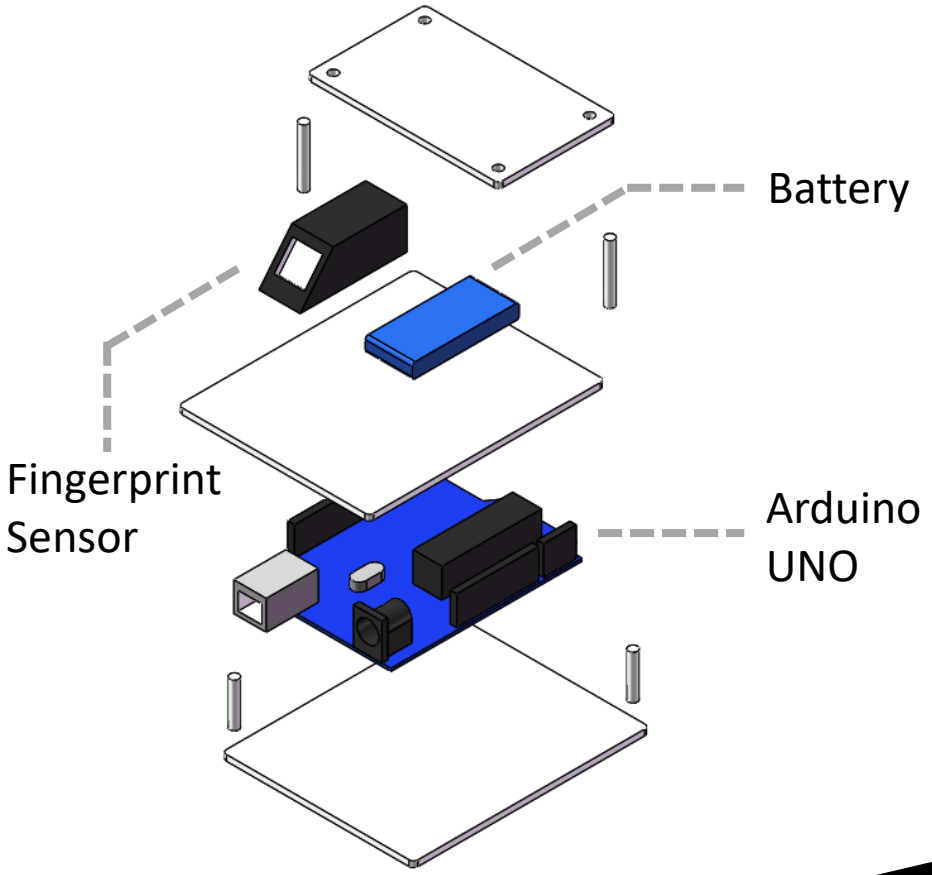


Figure 5. Exploded View for Part B

Introduction

- **Criteria**
  -
  -
  -
- **Constraints**
  - Portable and Secure
  - Total Budget <600 RMB(100 USD)
  - Due by Aug.1st

Introduction

Gantt Chart

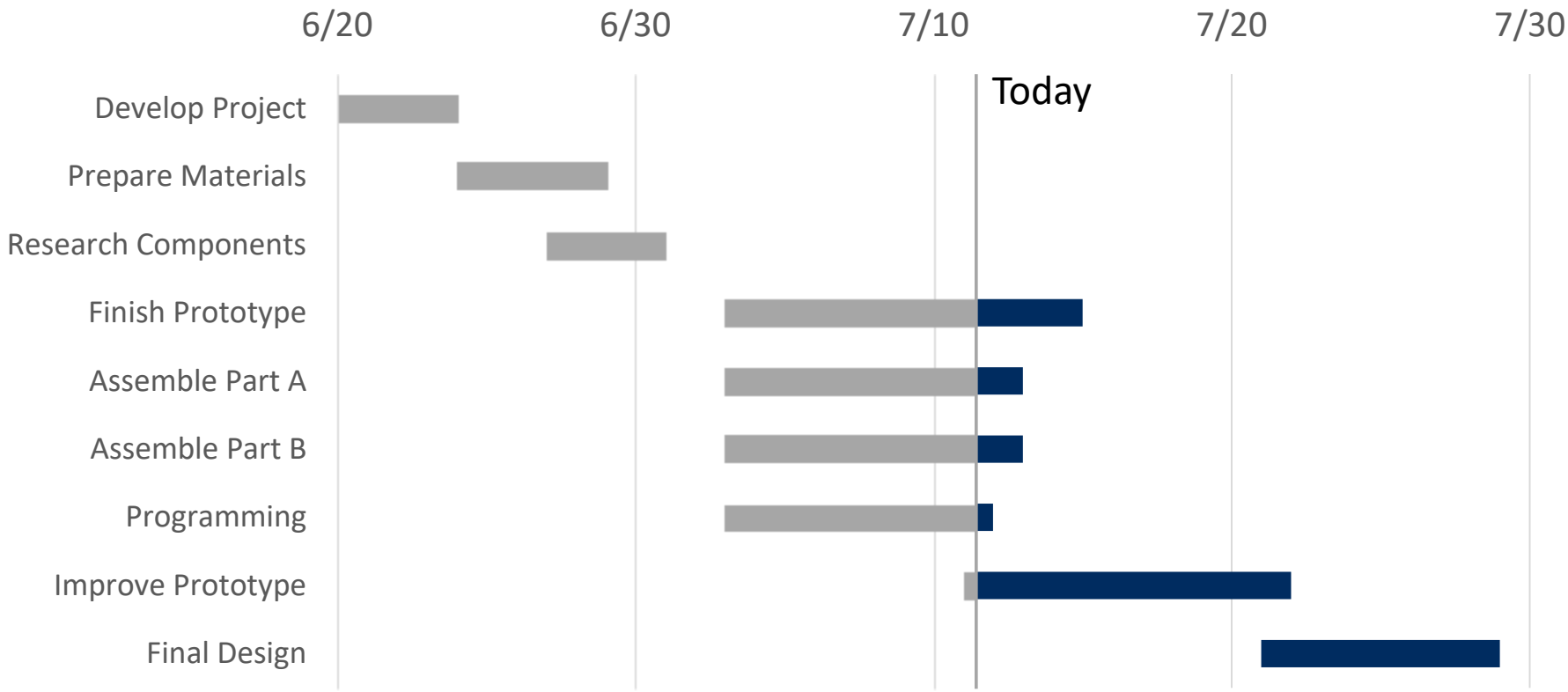


Chart 1. Gantt Chart for the Main Tasks

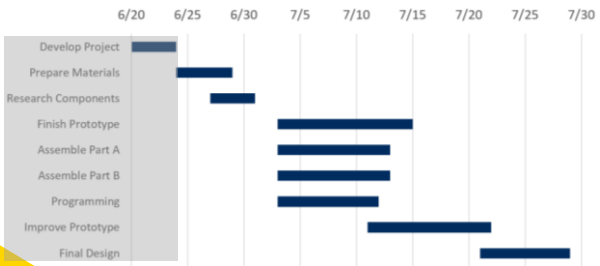
Main Section

Tasks Completed

100%

Develop Project
6/20-6/23

- Brainstorm Idea
  6/20-6/23, All
- Distribute the work
  6/22-6/23, Junchen



100%

Research Components
6/25-7/2

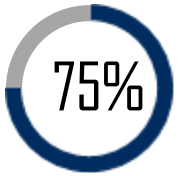
- Research fingerprint sensor
  6/27-6/30, Junchen
- Research EEPROM
  6/27-6/30, Junchen
- Research key-lock System
  6/27-6/30, Zhenhong
- Research driving system
  6/28-6/30, Zhenhong

100%

Prepare Materials
6/24-6/28

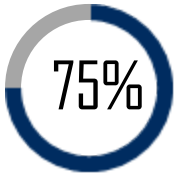
- Buy ready-made components
  6/24-6/28, Junchen
- Design CAD
  6/27-6/28, Jiaxin
- Laser cutting Acrylic Parts
  6/28-6/29, Jiaxin

Tasks In Progress



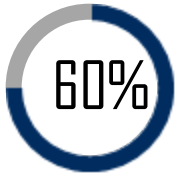
Assemble Part A
7/3-7/13

- Locate the components
  7/3-7/11, Zhenhong
- Wire components
  7/4-7/11, Zhenhong
- Package Part A
  7/5-7/13, Zhenhong

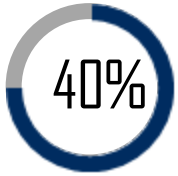


Assemble Part B
7/3-7/13

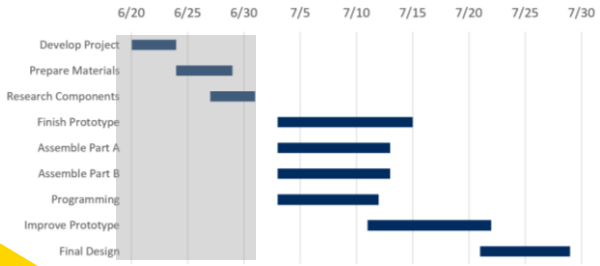
- Locate the components
  7/3-7/11, Junchen
- Wire components
  7/4-7/11, Junchen
- Package electronics
  7/5-7/13, Junchen



Programming
7/3-7/11, Junchen



Test Prototype
7/11-7/13, All



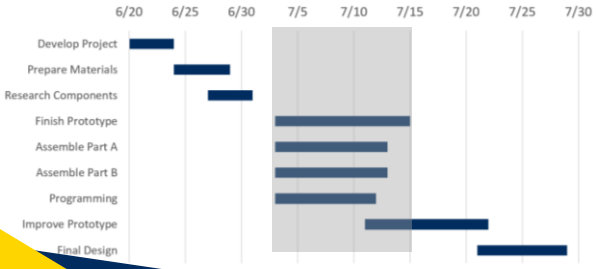
Tasks Remained

0%

Improve Prototype

7/11-7/21

- Analyze Prototype 1
  7/12-7/3, Yuzhuo
- Adjust size and structure
  7/13-7/15, All
- Make Prototype 2
  7/15-7/21, Zhenhong, Junchen, Jiaxin
- Improve programming
  7/15-7/21, Junchen



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Final Design

7/21-7/28

- Improve stability
  7/21-7/28, Yuzhuo
- Improve external design
  7/21-7/28, All
- Seek design flaw
  7/21-7/24, All
- Make final product
  7/21-7/28, Zhenhong, Junchen, Jiaxin

Main Section

Problems

Size	Design	Precision
Integrate Circuit SOLUTION	Integrate interface SOLUTION	Further technology improvement SOLUTION

Conclusion

Have

- Research components
- Prepare materials

Are

- Finish the prototype

Will

- Improve the prototype
- Make the final product
- Finish the report
- Prepare for symposium and design expo

Thank you!
Q&A