




자유주제 모델링

Car Center



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Chapter 1

조 이름과 주제선택

Q. 조 이름을 Car Center로 지은 이유는?

A. 미래자동차공학과와 중심이 되고 싶기 때문에

- 첫 번째 주제는 비행기로 결정
- 범위가 광범위해서 축소
- 두 번째 주제는 조 이름에 맞게 Car lift 선정

Chapter 1

조 이름과 주제선택

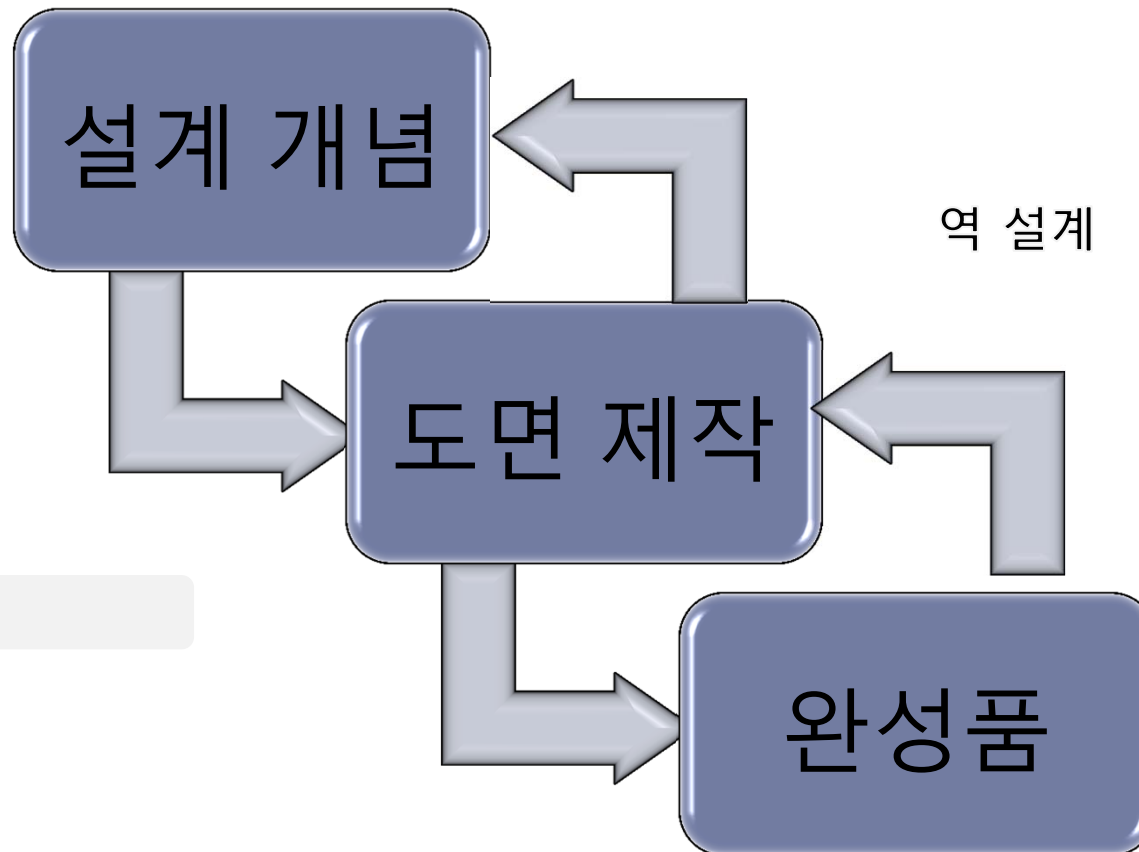
- 크레도스 사의 Car lift를 선정



Chapter 2

역 공학 설계란?

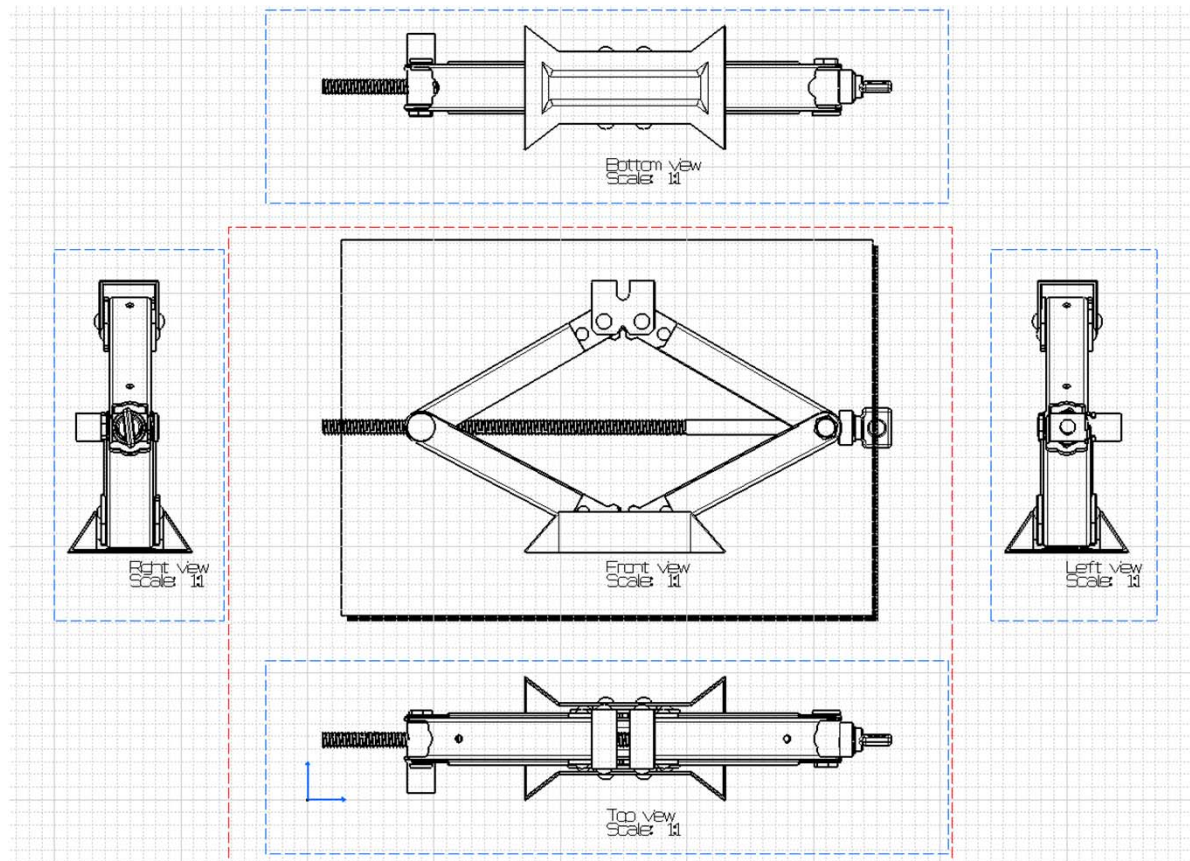
-주어진 실제 물체로부터 공학적 개념이나 형상모델을 추출해 내는 과정



Chapter 3

부품의 종류, 형상 및 치수 실측

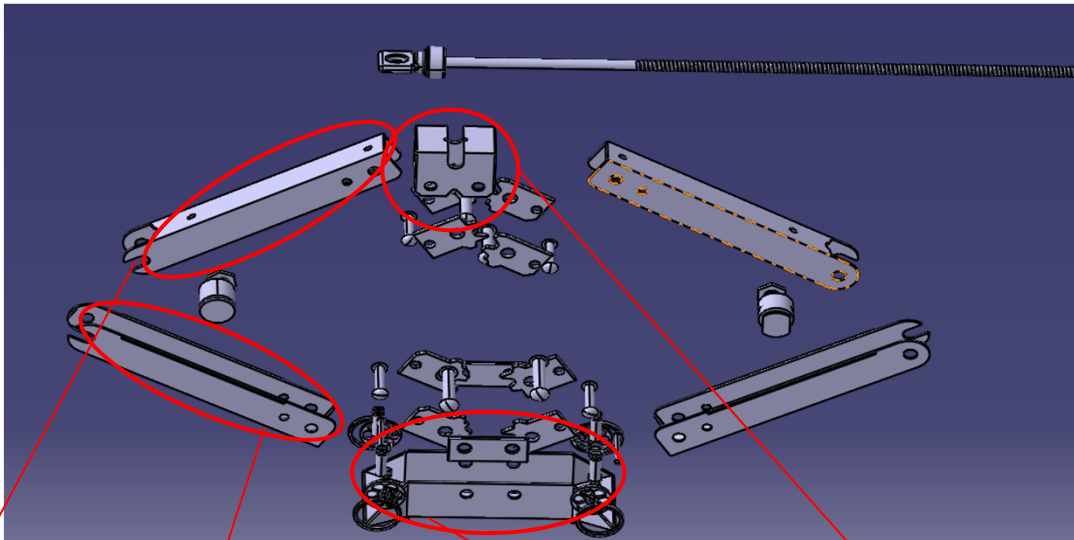
- 전체 형상



Chapter 3

부품의 종류, 형상 및 치수 실측

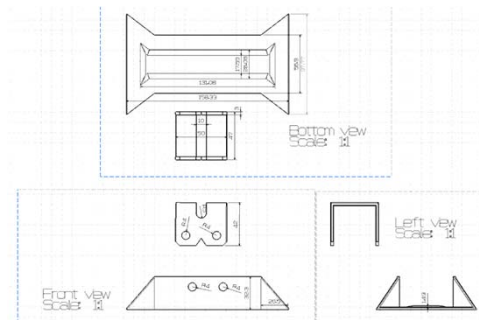
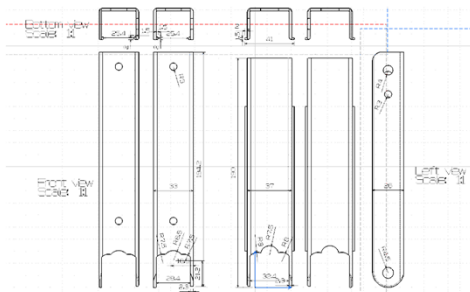
- 전체 형상



Up Frame 2개 | Down Frame 2개

Bottom

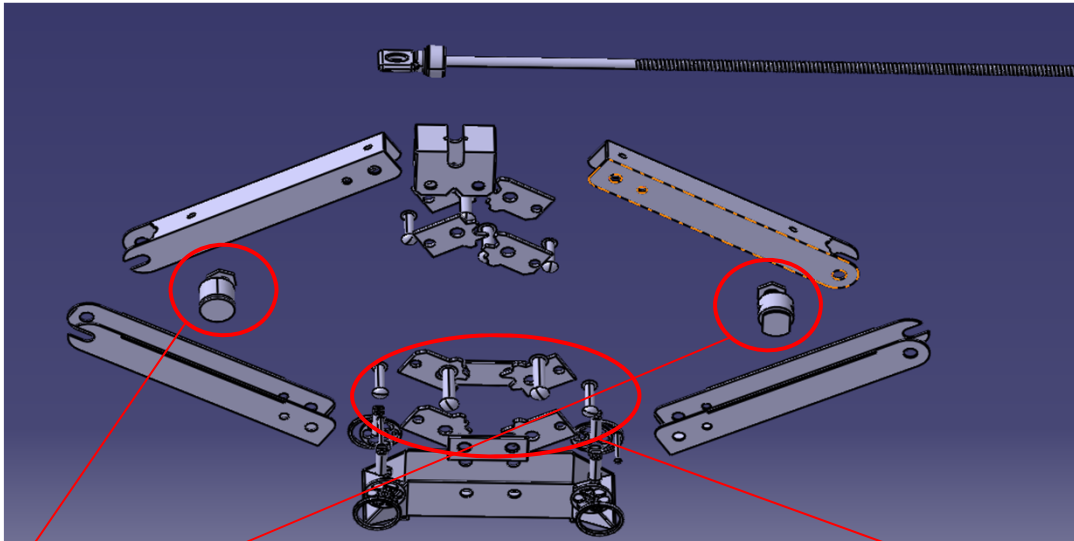
Cover



Chapter 3

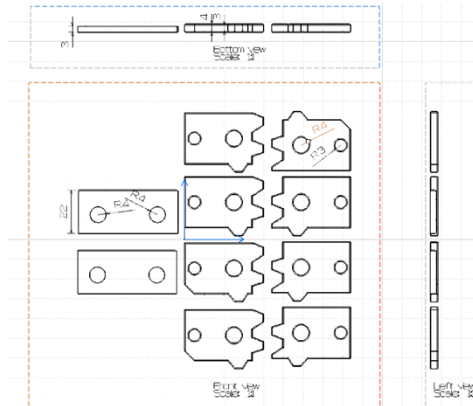
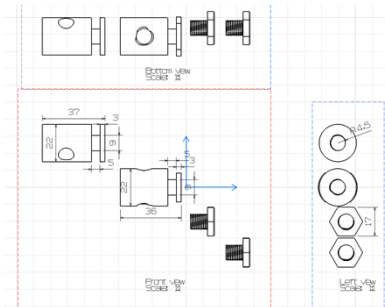
부품의 종류, 형상 및 치수 실측

- 전체 형상



Coupling 2개 Bolt 2개

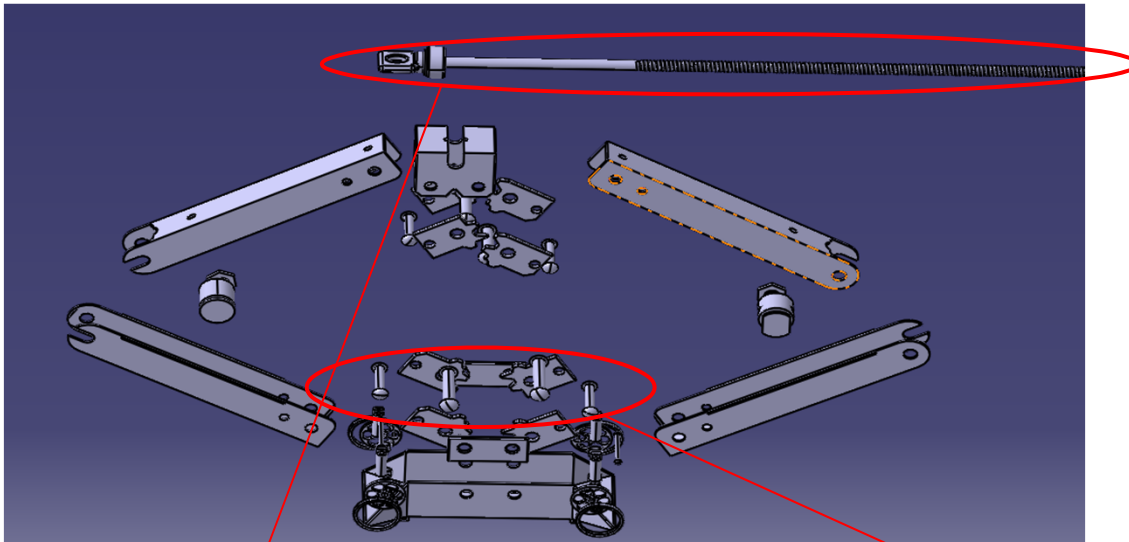
Plate 10개



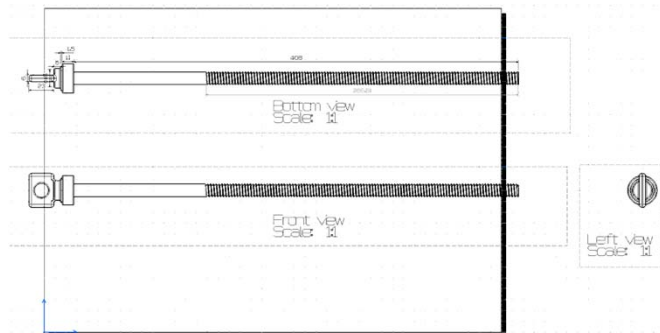
Chapter 3

부품의 종류, 형상 및 치수 실측

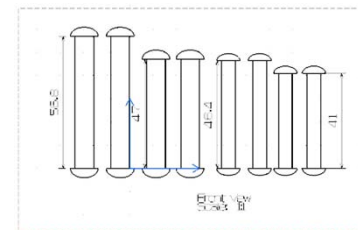
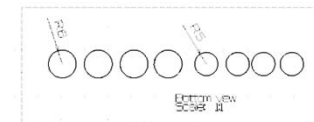
- 전체 형상



Screw



Rivet8개



Chapter 4

Mechanical Design

- Part Design

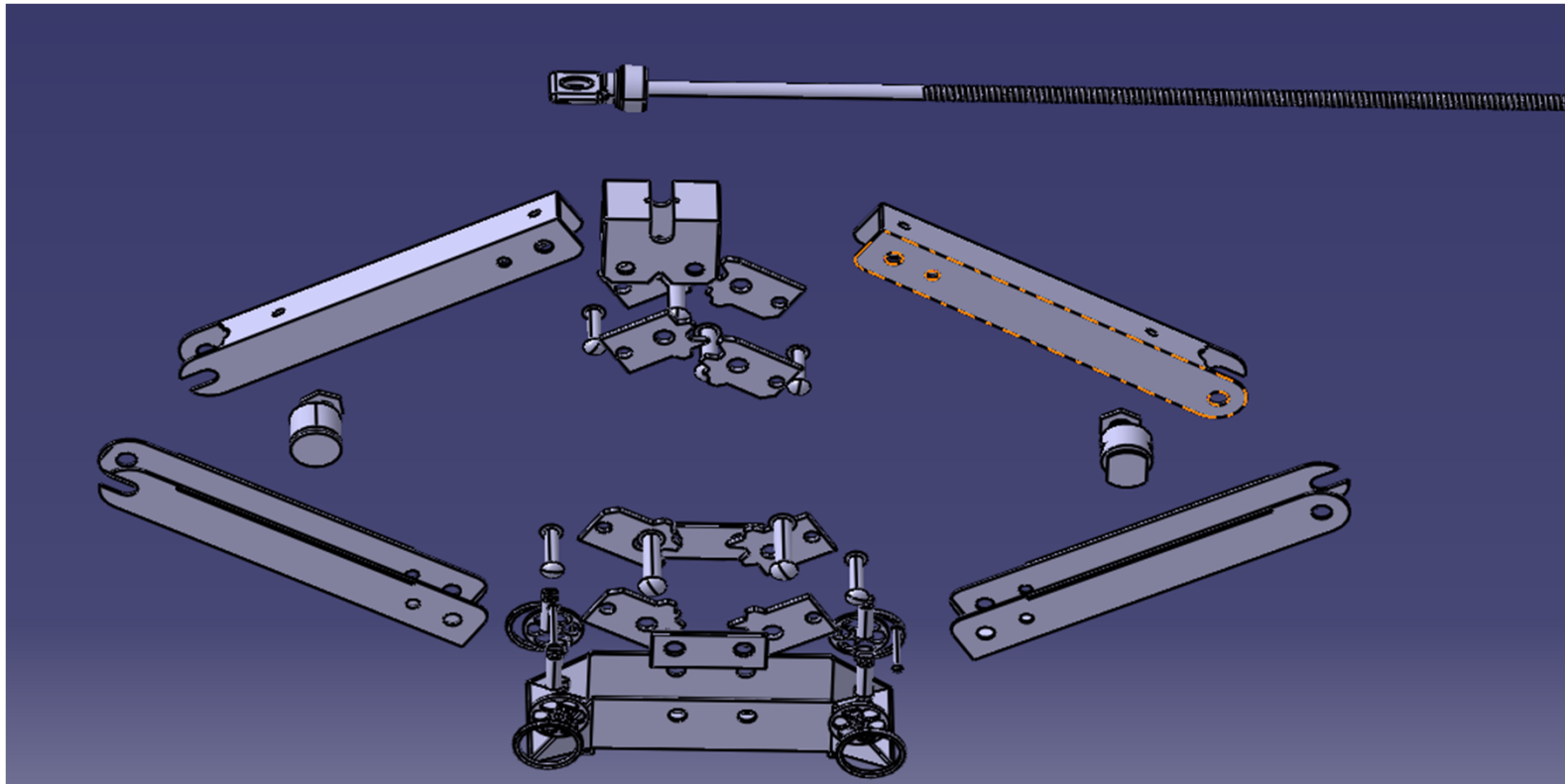


각기 다른 20개의 부품을 실측 치수를 바탕으로 Part Design으로 제작

Chapter 4

Mechanical Design

- Assembly Design 하기 전

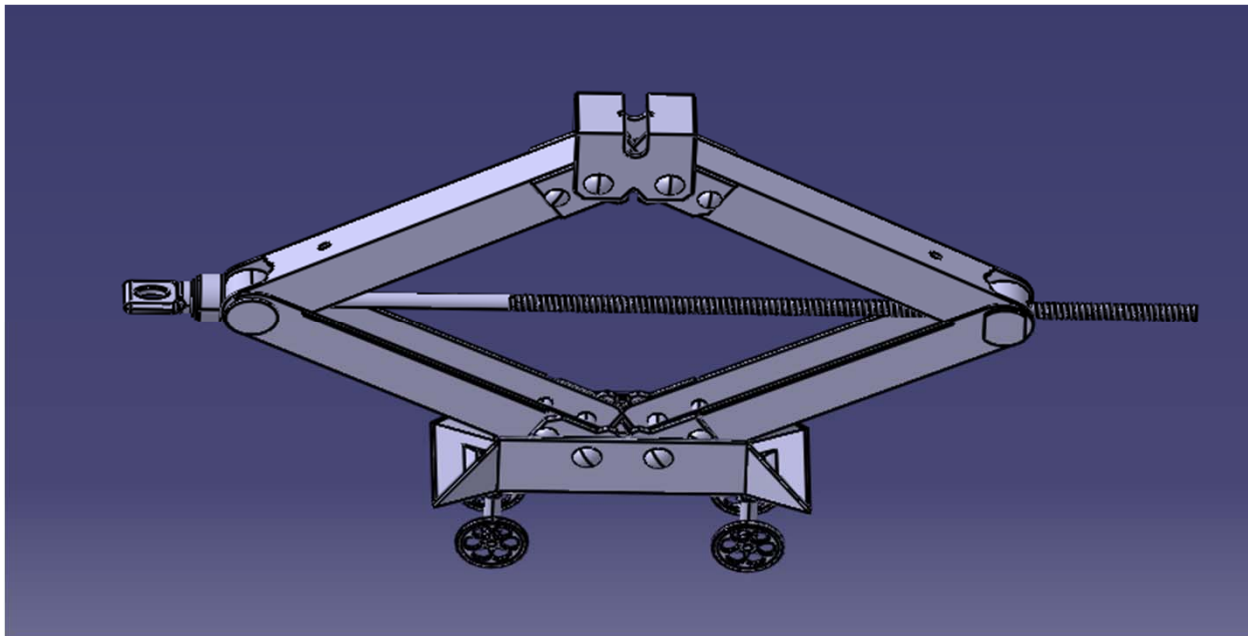


총 48개의 PartBody들이 구속되지 않음

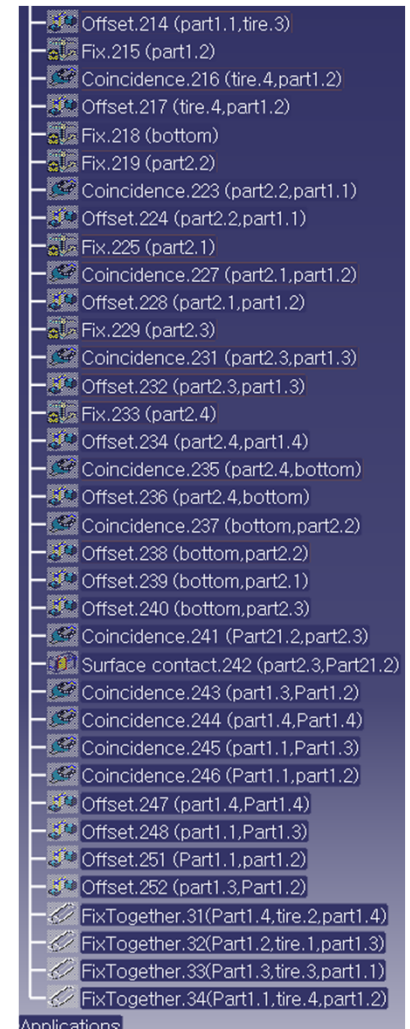
Chapter 4

Mechanical Design

- Assembly Design 한 후



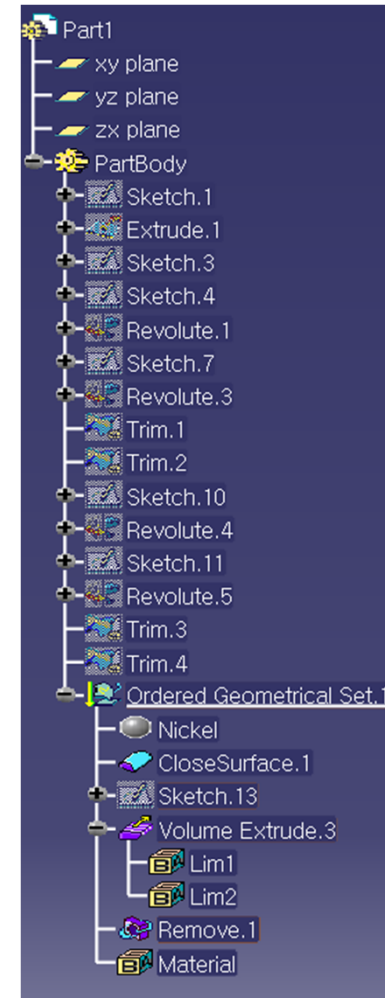
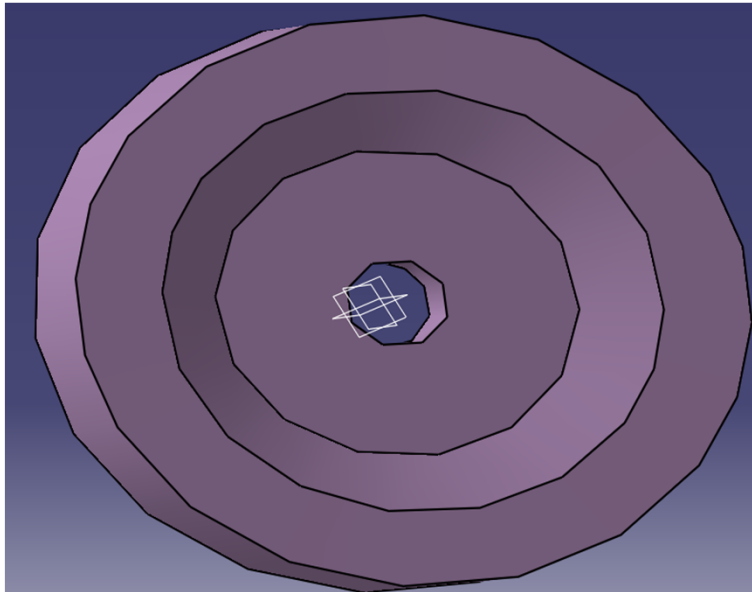
총 48개의 PartBody들이 252개의 구속조건을 가짐



Chapter 5

Generative Shape Design

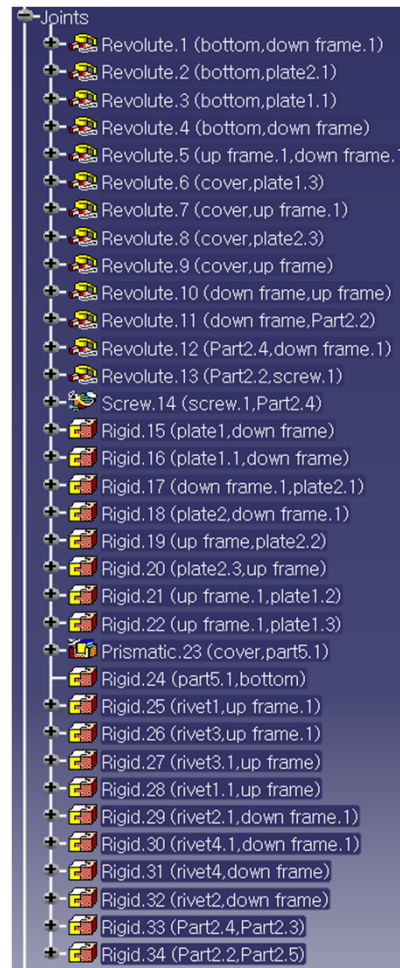
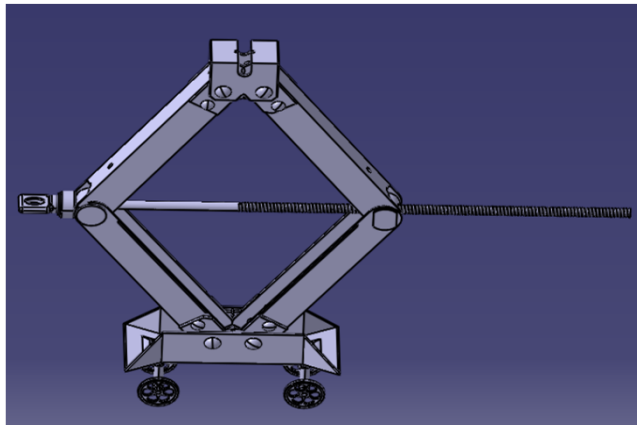
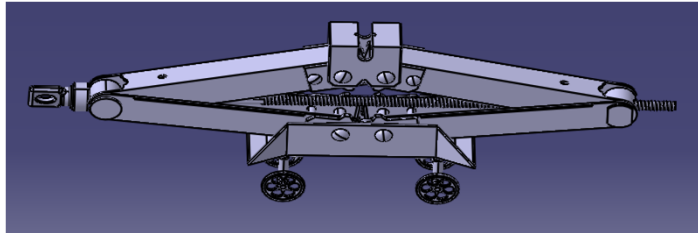
- Generative Shape Design



Chapter 6

Kinematics

- Mechanism.1



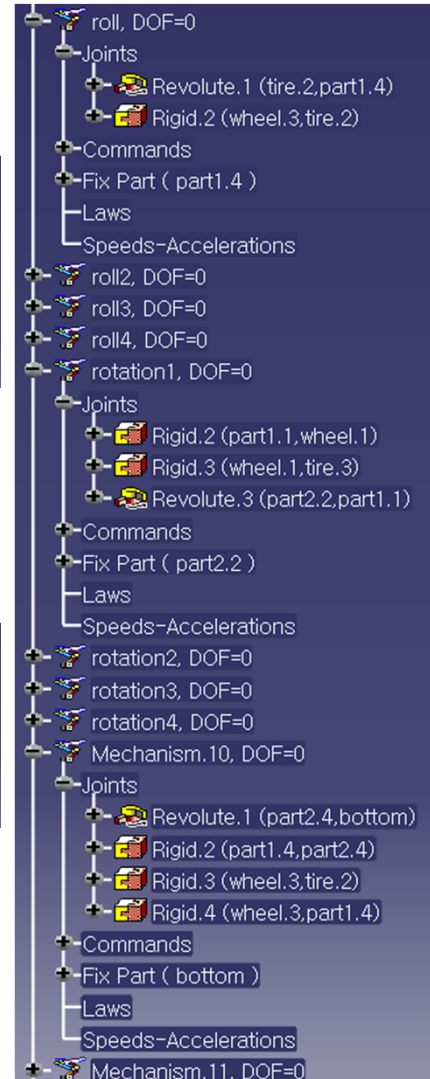
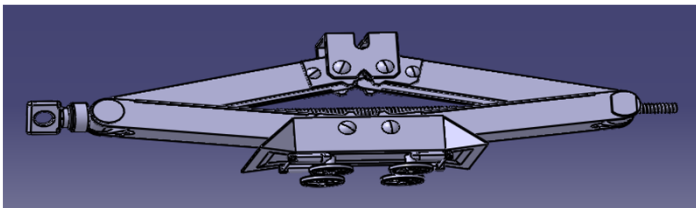
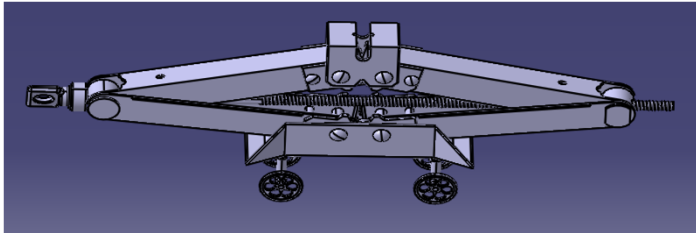
- Car lift에서 가장 주축운동

- 34개의 Kinematics Joint 사용

Chapter 6

Kinematics

- Mechanism.2



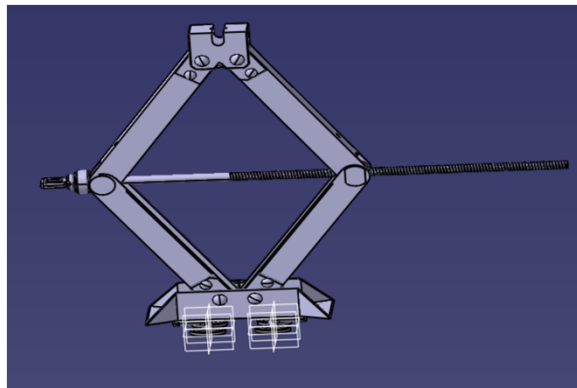
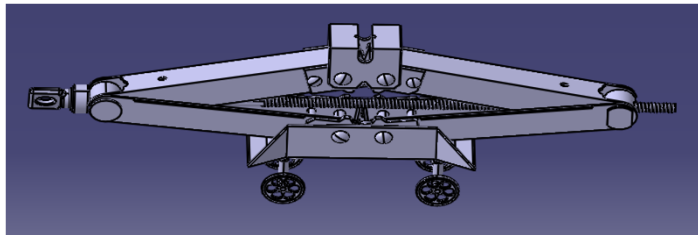
- 바퀴가 접히는 운동

- 순차적인 운동

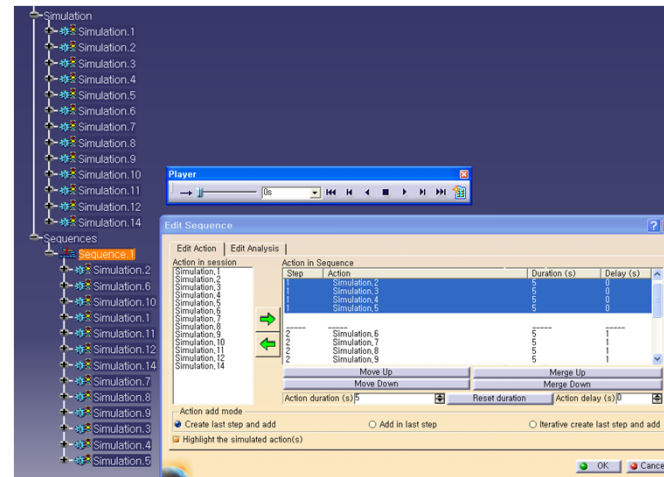
Chapter 6

Kinematics

- Sequences



- 독립적인 시뮬레이션을 순차적으로 보여줌





기타

- 역할 분담

1. 조 이름 및 주제 선정
 - Brainstorming을 통해 각자 의견 중 최선의 선택을 함
2. Part Design
 - 20개의 부품 중 10개씩 분담
3. Assembly Design, Kinematics, Drafting
 - 같이 모여서 작업



Chapter 6

Kinematics

- 동영상 구현



Thank
You



Do you have any
question?

