Team 302

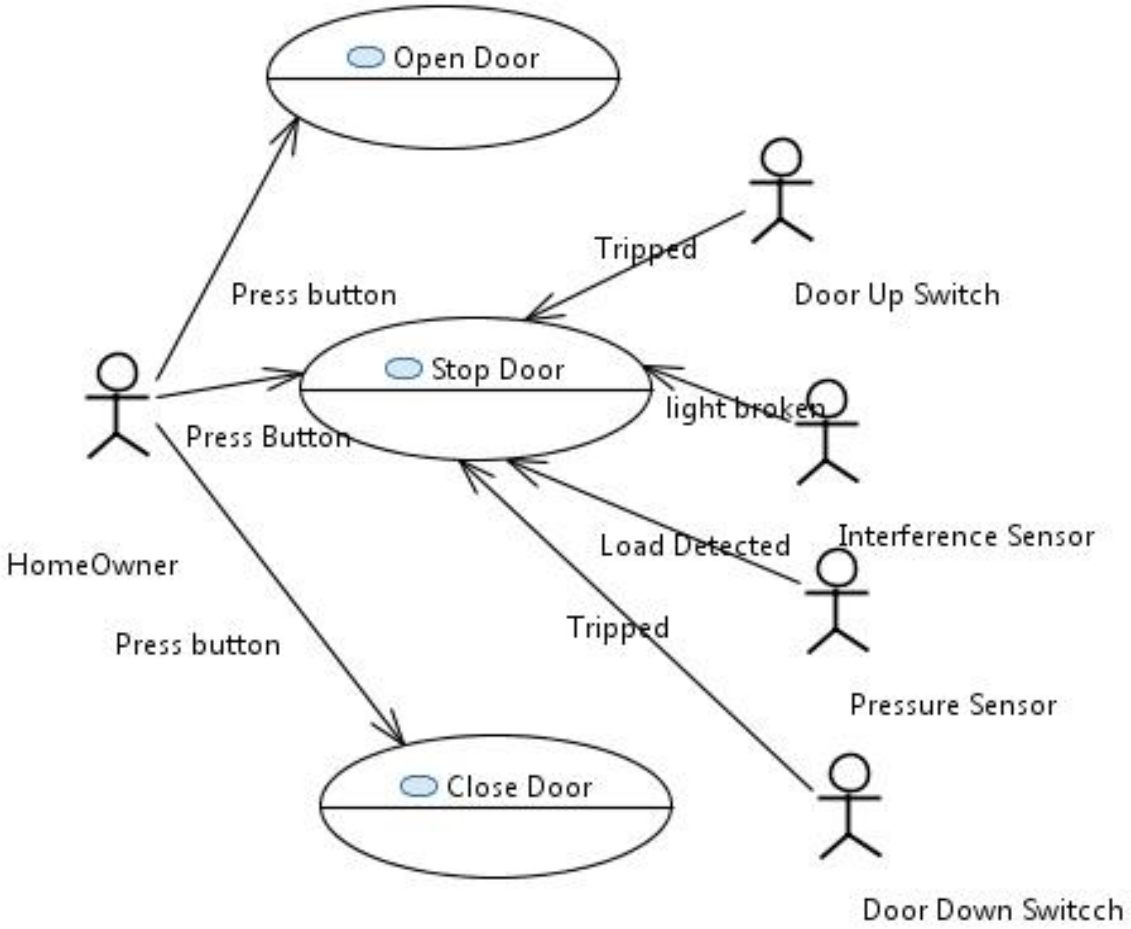
Unified Modeling Language (UML) - Use Cases

Use Case Diagram Components

Use Case = bubble

Actor = Stick Figure

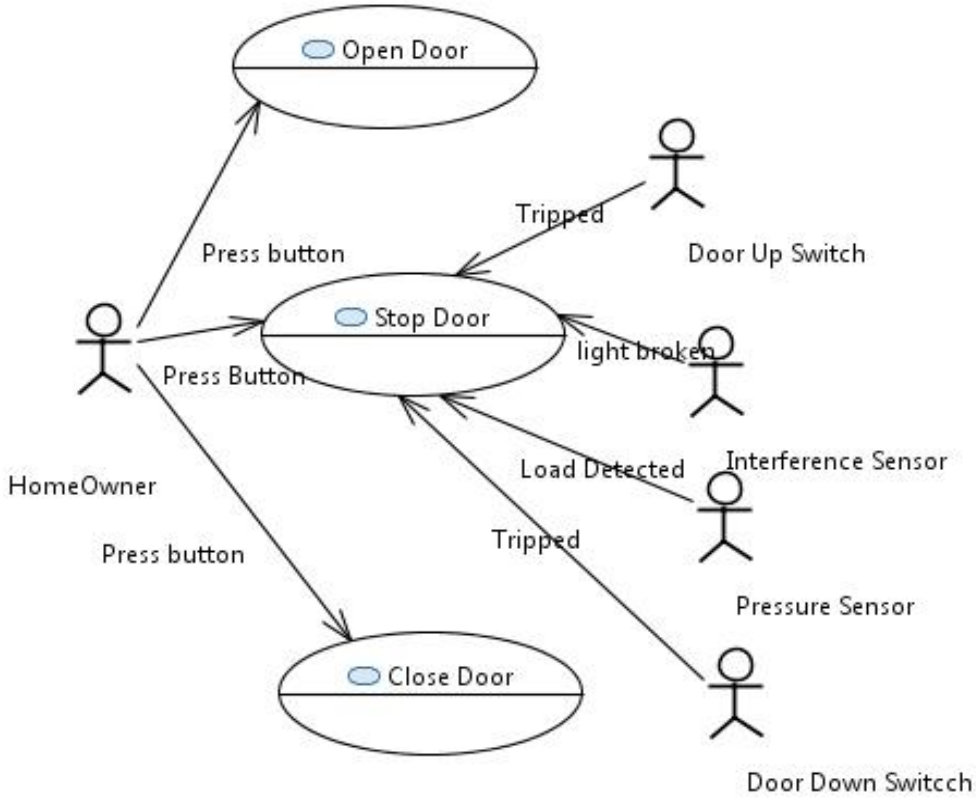
Associations = Lines



Use Case Diagram Components

Use Case (with a name starting with a verb)

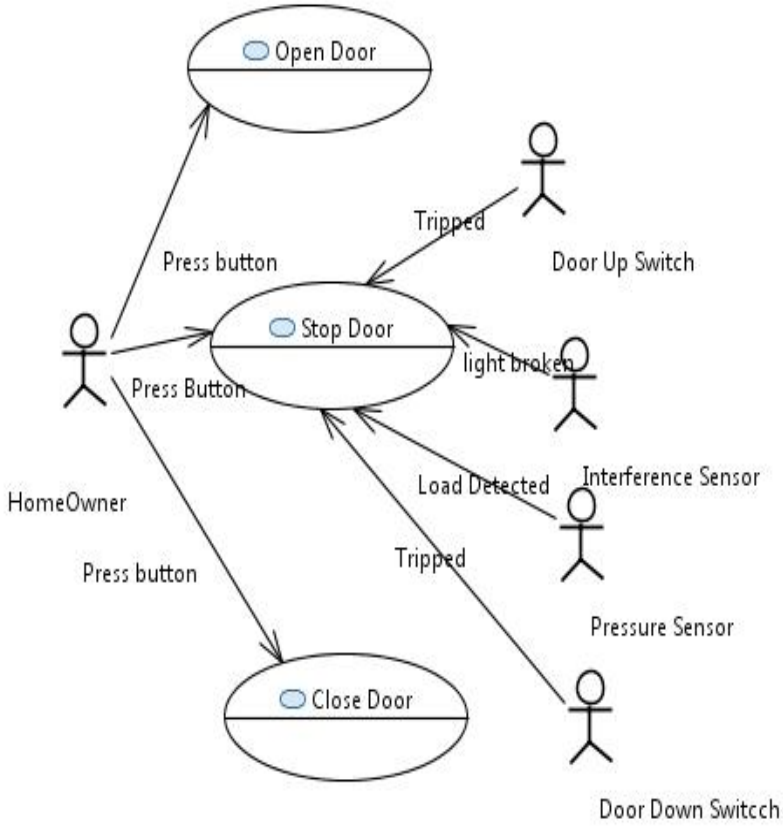
Describe an action that is measureable by an actor



Use Case Diagram Components

Actor (Stick Figure)

Person, organization or external system that interacts with the system (think of it as things that interact with the RoboRio).

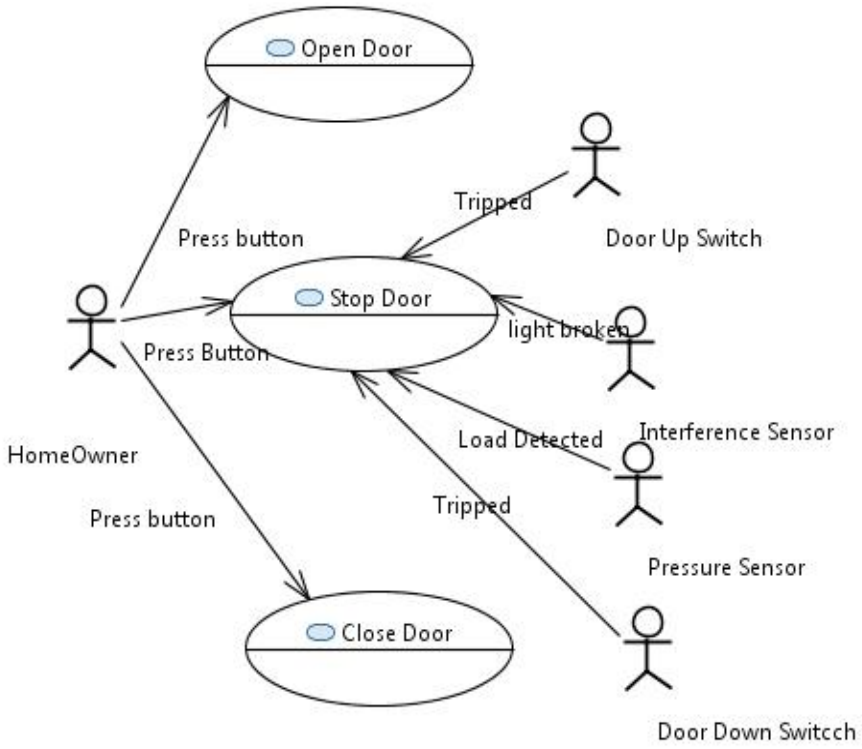


Use Case Diagram Components

Associations (lines with or without arrows)

Shows actor relationships to the use cases

Can be labeled (optionally)



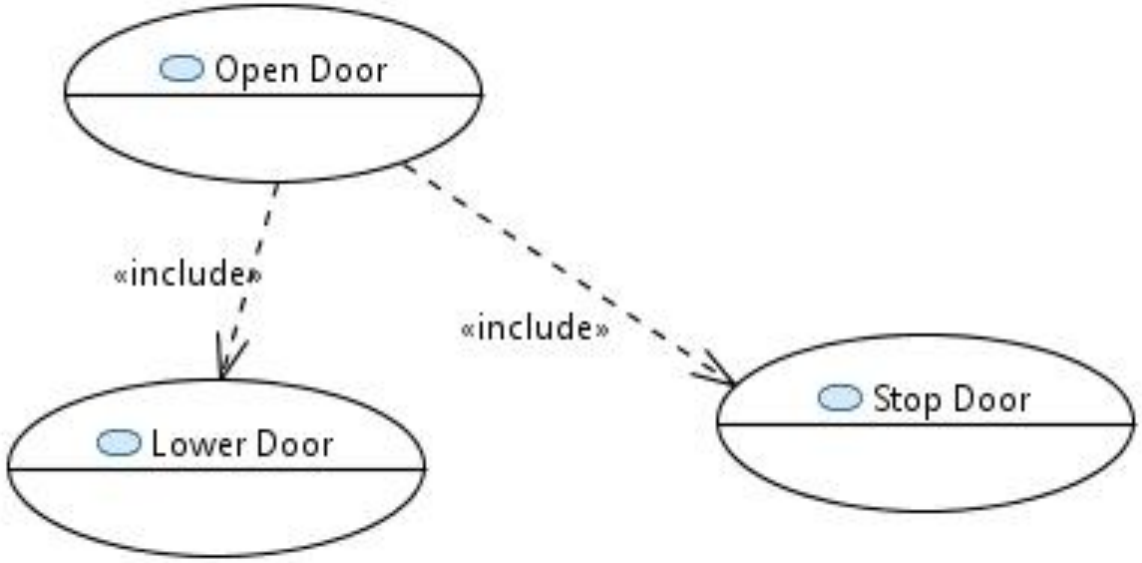
Document Steps

Name	Close Door
Description	Home Owner closes the garage door
Actors	Home Owner Door Down Switch Interference Switch (alternate) Pressure Switch (alternate)
Basic Flow	Home Owner presses the button Motor Starts Door lowers Door Down Switch gets tripped Door Stops
Alternate Flow(s)	4a. Interference Switch gets tripped 5a Door Stops and Goes up 4.b Pressure switch indicates load (e.g. door hit something) 5b. Door Stops and Goes up

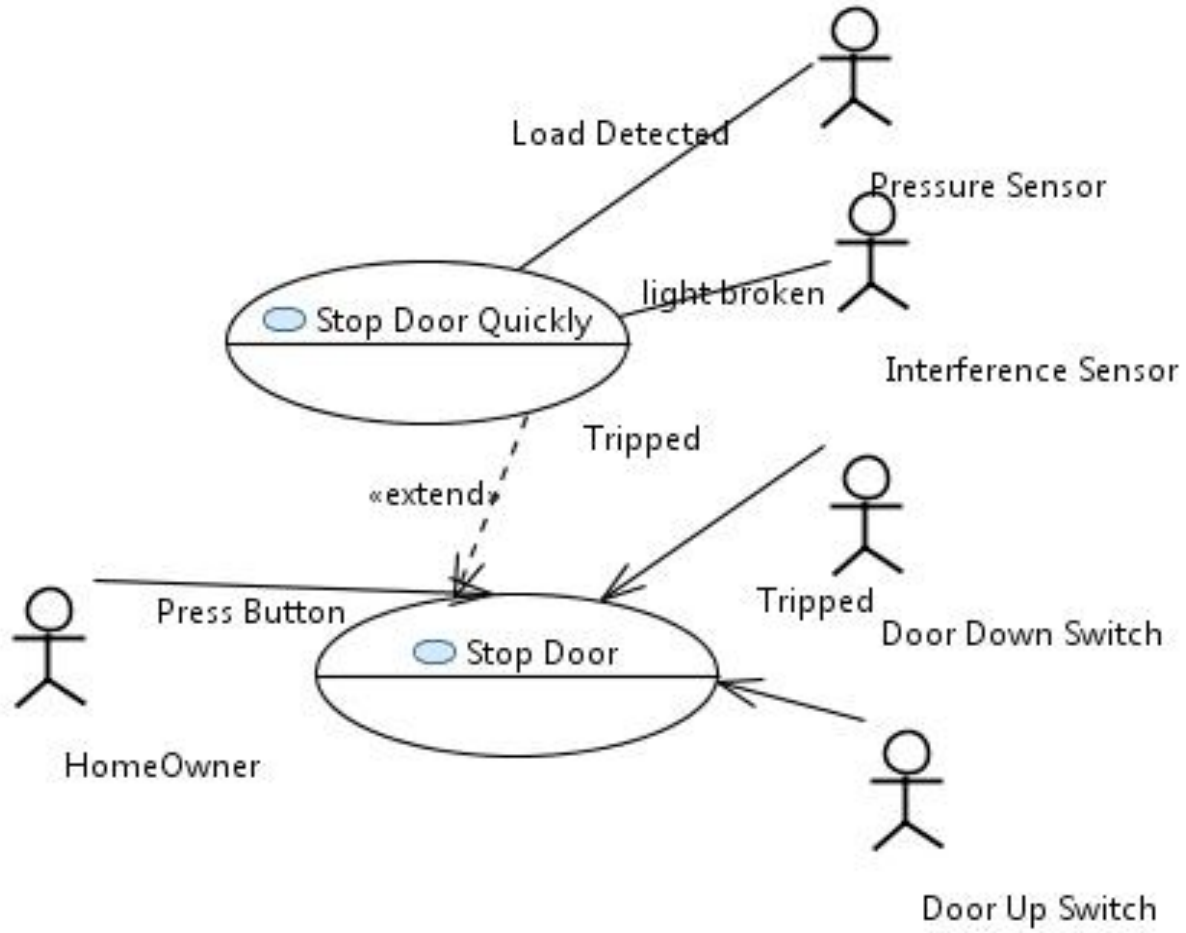
Detailed Use Cases

- Break down Use Cases to show relationships between subcases
  - Uses/Includes: Does that step too
    - Lower door uses Stop Door
  - Extends
    - Does the step with different parameters
      - Maybe the rate at which the door stops changes based on what condition caused it to stop

Includes / Uses Example



Extends Example



Activity

- Create Use Case Diagram for the ball handling mechanisms on the 2016 Competition Robot.
- Try using Papyrus plug-in from eclipse or StarUML