

Smart Cat Door

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SmartDoor™

protect. teach. love.

LARGE = 7 lb - 100 lb
GRAND = 3 kg - 45 kg
GRANDE = 3 kg - 45 kg

Relax. We'll let the dog out.



Decide which pet comes and goes by giving them a SmartKey™ to your home.
Seuls les animaux que vous autorisez en leur donnant une SmartKey™ auront accès à votre maison.
Decida qué mascotas ingresan y salen de su casa con el transmisor SmartKey™.

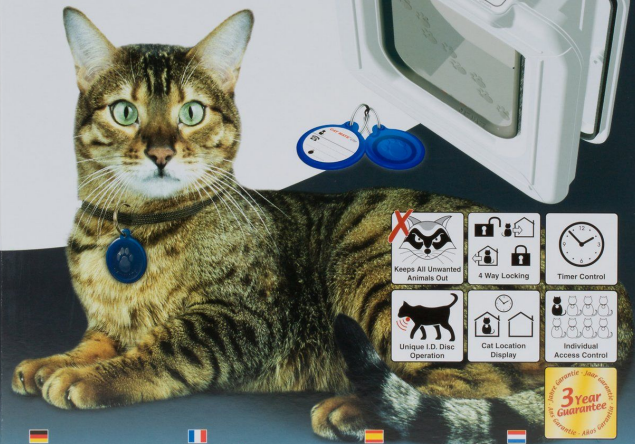


One SmartKey™ and battery included
Une SmartKey™ et une pile incluse
Se incluye un transmisor SmartKey™ y una batería

FLAP OPENING 11" x 16"
OUVERTURE DU RABAT 27,94 cm x 40,64 cm
ESPACIO DEL PANEL VAIVÉN DE LA PUERTA
PARA MASCOTAS 27,94 cm x 40,64 cm

- Fitted for wood, metal and PVC doors
- Fits 1/2" (12.7 mm) doors
- Compatible with automatic pet leashes
- Suitable for use with pet carriers, dog houses, metal & PVC cages and other doors 3/4" x 1,00 cm
- *Options for alternative applications are available on request
- *Consulte los diagramas sobre instrucciones alternativas en el manual del propietario

CAT MATE® Elite Super Selective I.D. DISC CAT FLAP WITH TIMER CONTROL



- Keeps All Unwanted Animals Out
- 4 Way Locking
- Timer Control
- Unique I.D. Disc Operation
- Cat Location Display
- Individual Access Control



I.D.-MARKE KATZENKLAPPE MIT ZEITSCHALTUHR-FUNKTION

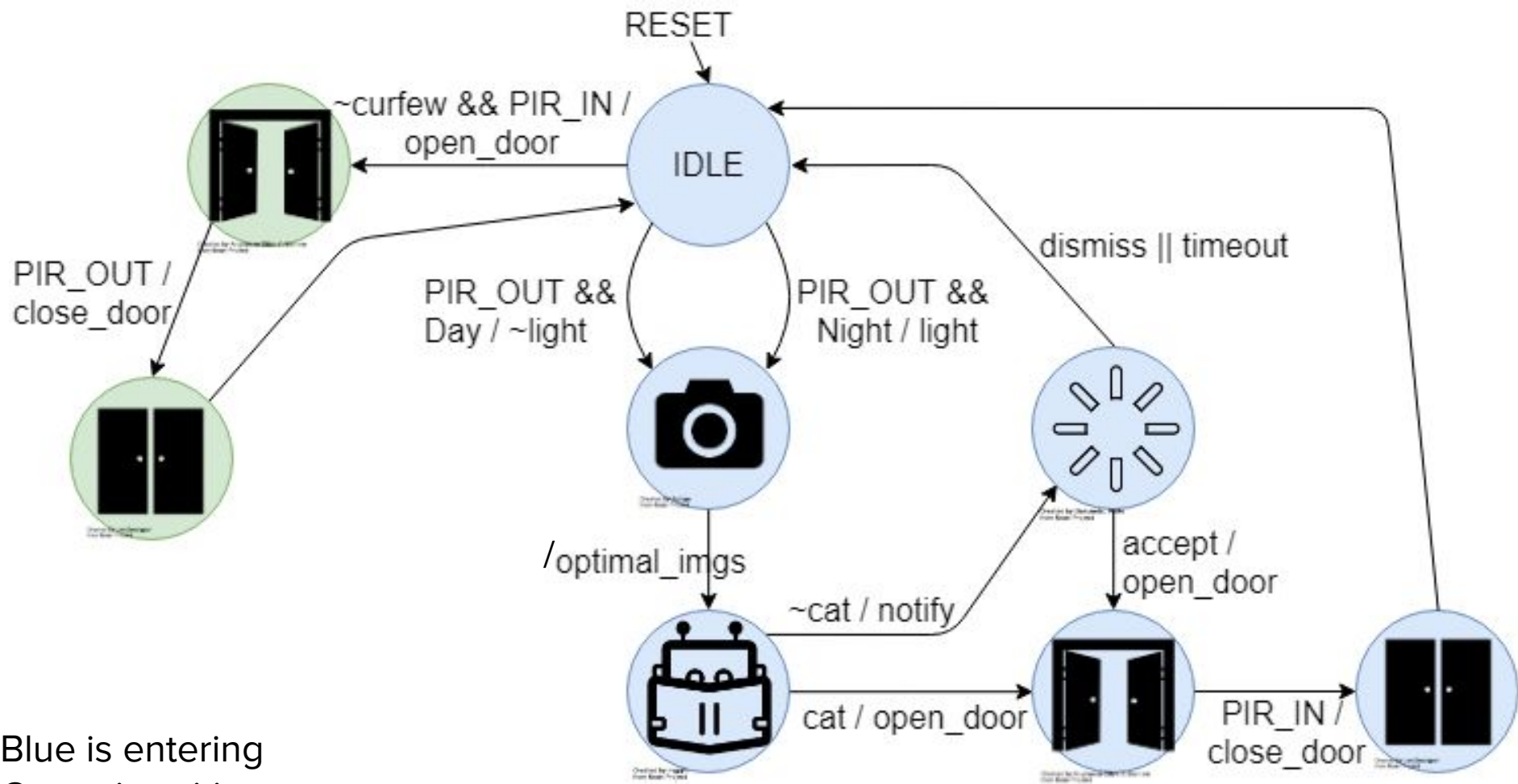
CHÂTIÈRE DISQUE D'IDENTIFICATION AVEC FONCTION DE TEMPORISATION

GATERA CON DISCO DE I.D. CON CONTROL DE TIEMPO

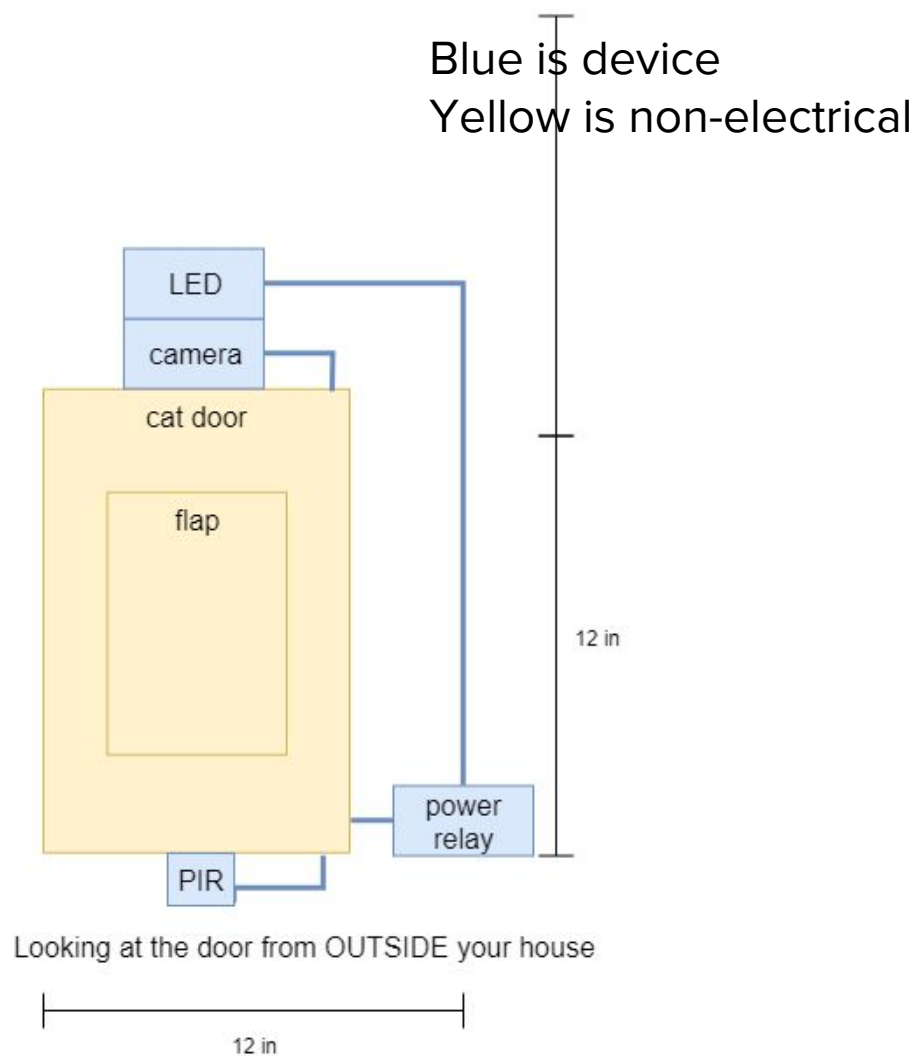
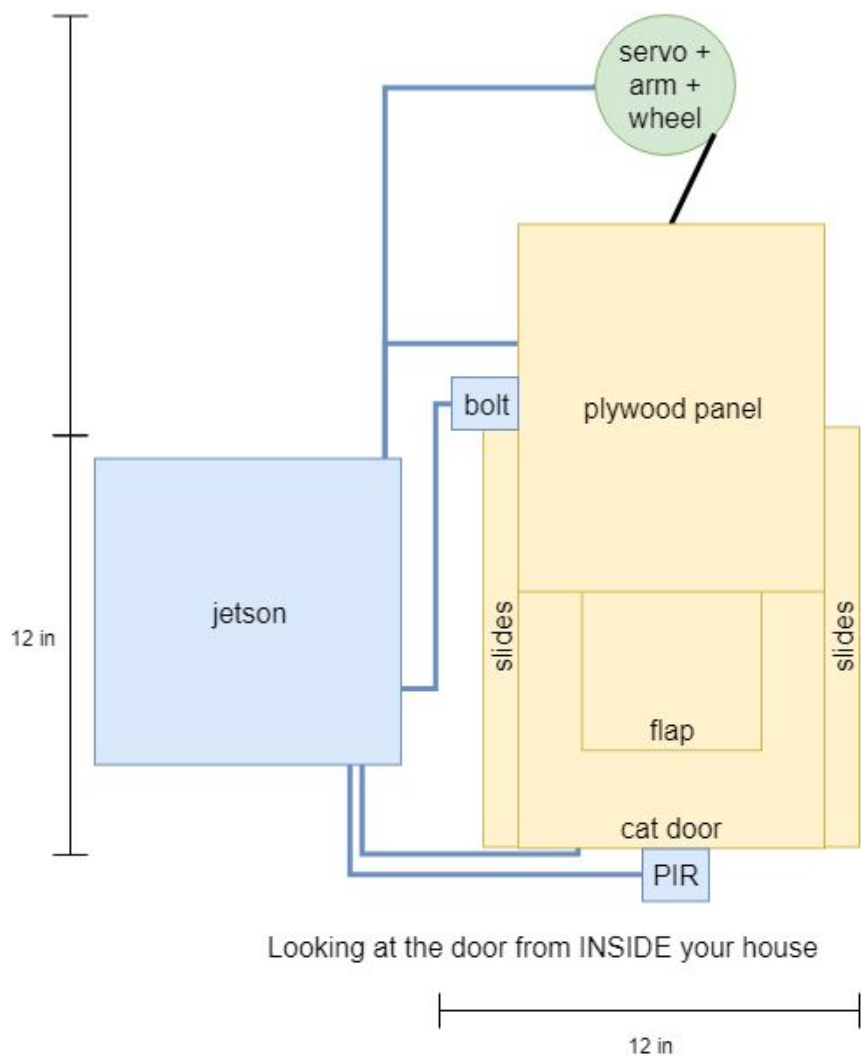
I.D. DISC KATTENDEUR MET TIJDKLOK FUNCTIONERING

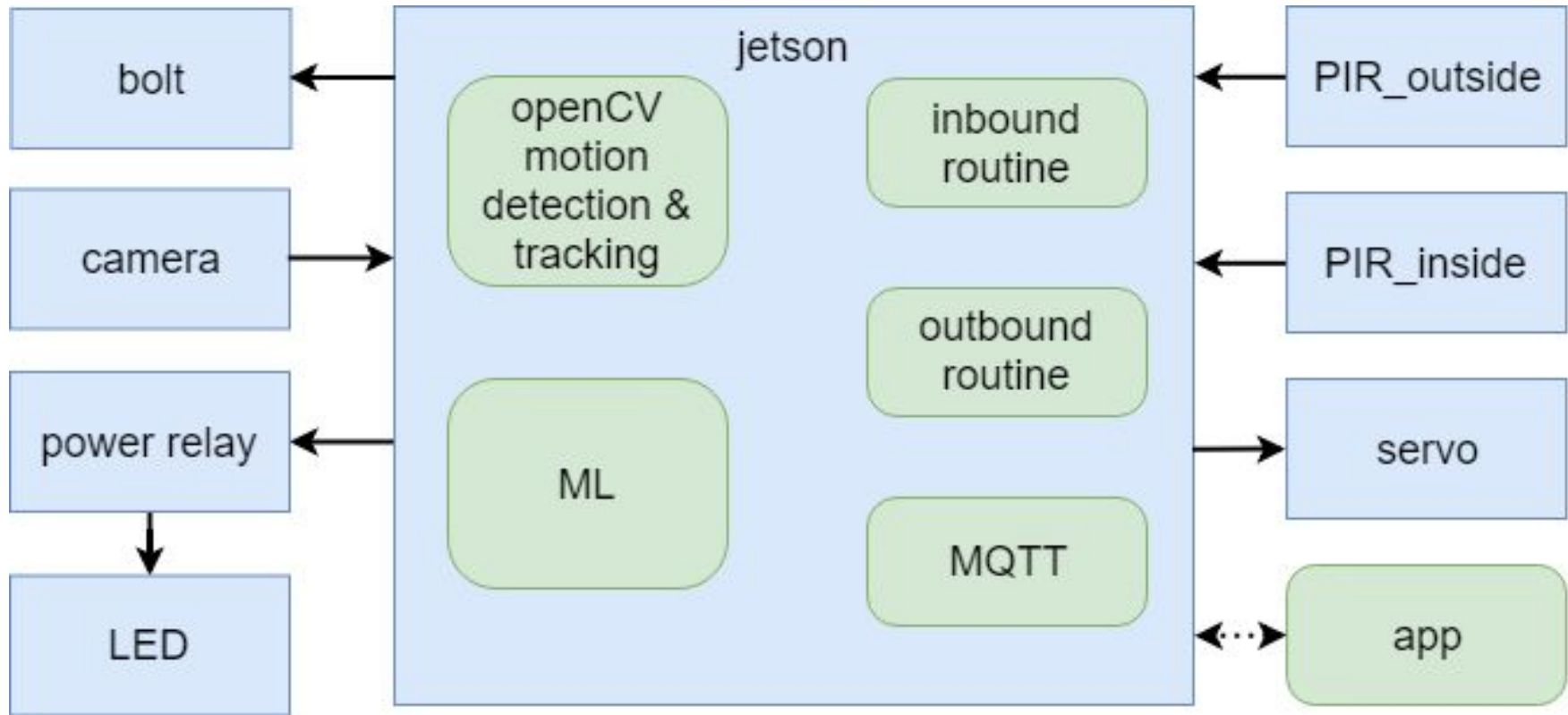


Issues: raccoons, inconsistent, range, retraining, sound



Blue is entering
Green is exiting



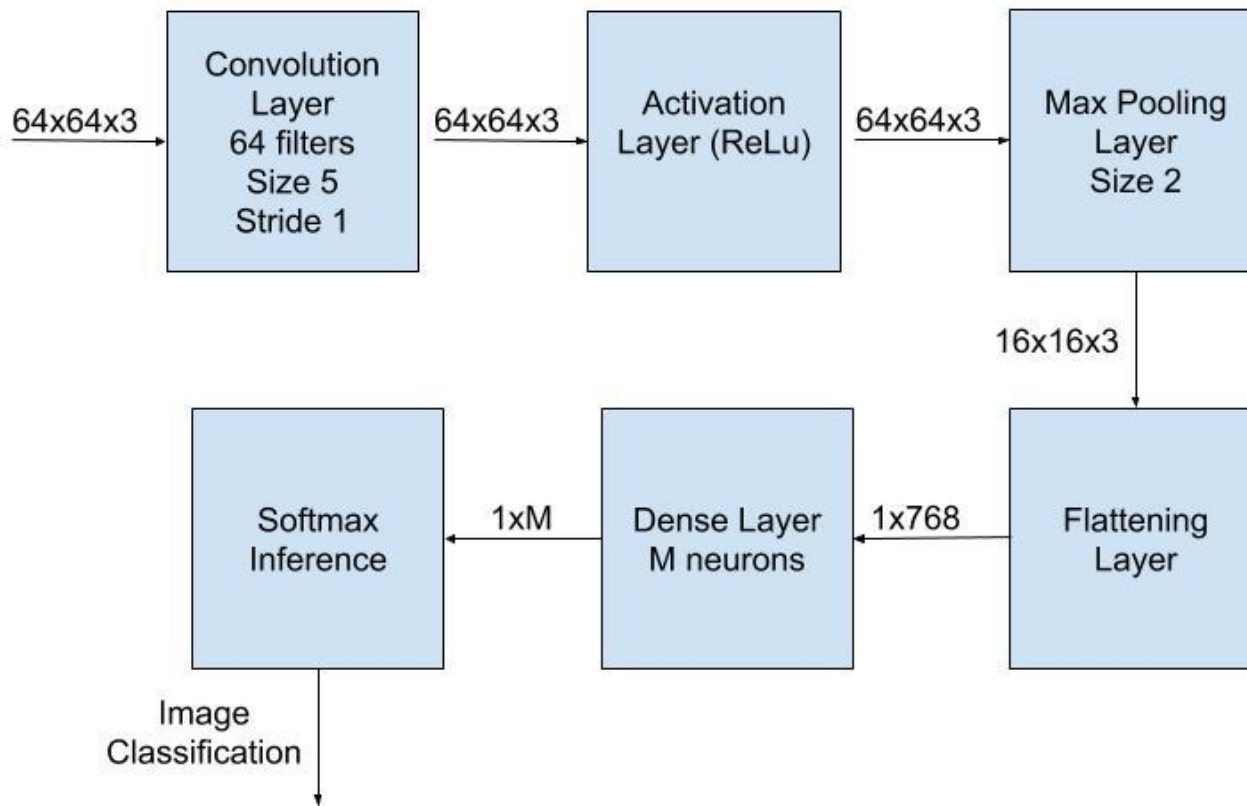


Blue is hardware
Green is software
Solid is wired
Dotted is wireless

Machine Learning

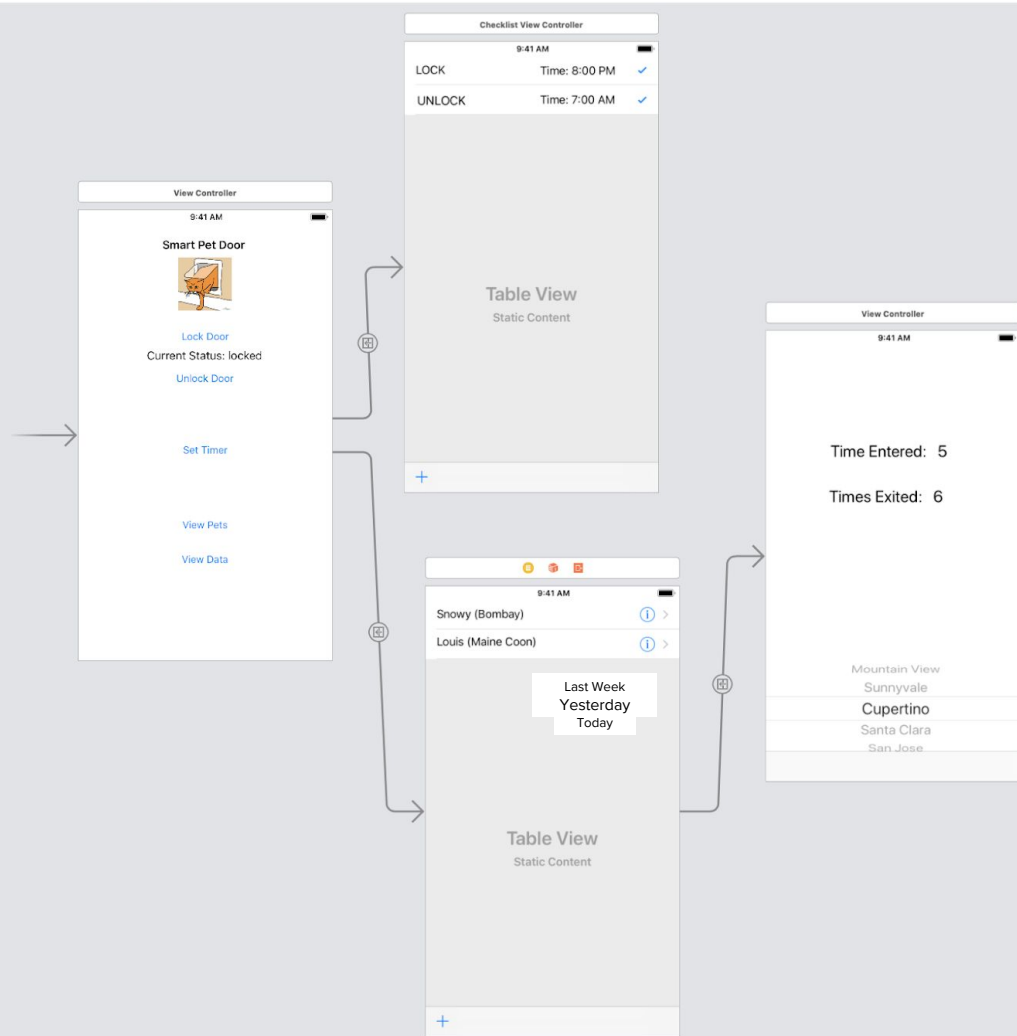
- Cat vs. Non-cat
 - Cat, Dog, Squirrel, Raccoon, Legs
- Breed of cat
 - 12 different breeds of cats
- Data Set
 - Cats: 2400 images of 12 breeds (200 each) + 1200 images of cats (without labels of breeds)
 - Dogs: 1200 images
 - Squirrels: 500 images
 - Raccoons: 300 images
 - Legs: 1300 images
- Testing data is 15% of data set
- TensorFlow & TensorRT

Machine Learning



iPhone App

- lock / unlock door
- set curfew
- add or remove a pet with its breed type
- view logs for door use



Metrics and Validation

Assumptions:

- The pet will walk towards the camera headfirst
- The pet is not covered in anything that significantly changes its appearance

Requirement	Test
Door withstands 13.6kg resistance	Strength test
Operate under 70dB	Decibel-reading app

Metrics and Validation

Raccoon gets in: 5%	ML test data
Cat is stuck outside: 5%	ML test data
1.2 s for door to open when the cat starts at 1m away	Stopwatch
Close door after cat is all the way through	Any object
Curfew times, locking	Mobile app, verified with printed pictures
Add/remove new breed	
Consistent lighting	Lights off

Metrics and Validation

End to End Testing

- Have a video of working system from off campus
- Use pictures of cats mounted on wheels for on campus demo

Schedule & Division of Work

Wk	Irene	Jing	Phil
8	door	ML - set up	App
9	door	ML - training	App
10	detection	ML - testing	Jetson integration (camera, PIR, app)
11	tracking	slack	Jetson integration (camera, PIR, app)
12	slack	integration	slack
13	integration	Integration	integration
14	testing	testing	testing