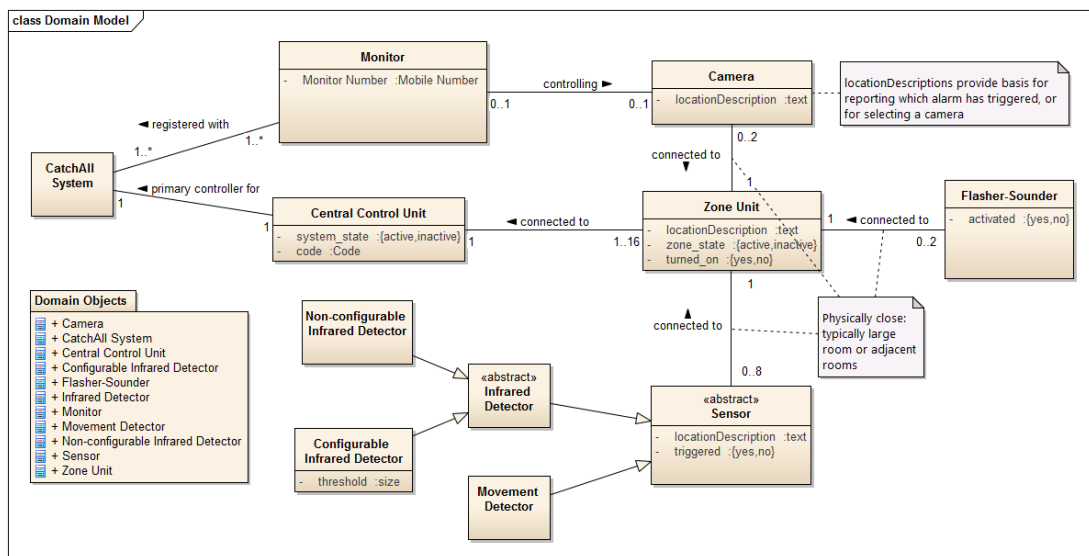# SWEN30006 Software Modelling and Design
Workshop 11: Getting a Better GRASP on Design

School of Computing and Information Systems
University of Melbourne
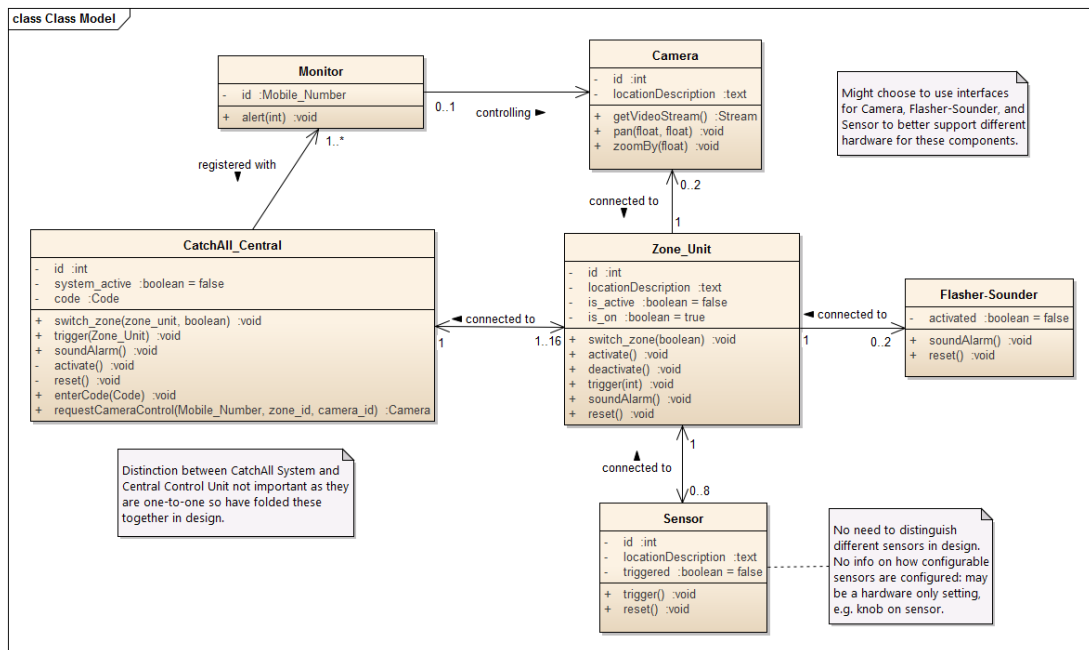Semester 2, 2020

Note: your solutions should be hand-drawn. Your models may differ subject to assumptions you have made.
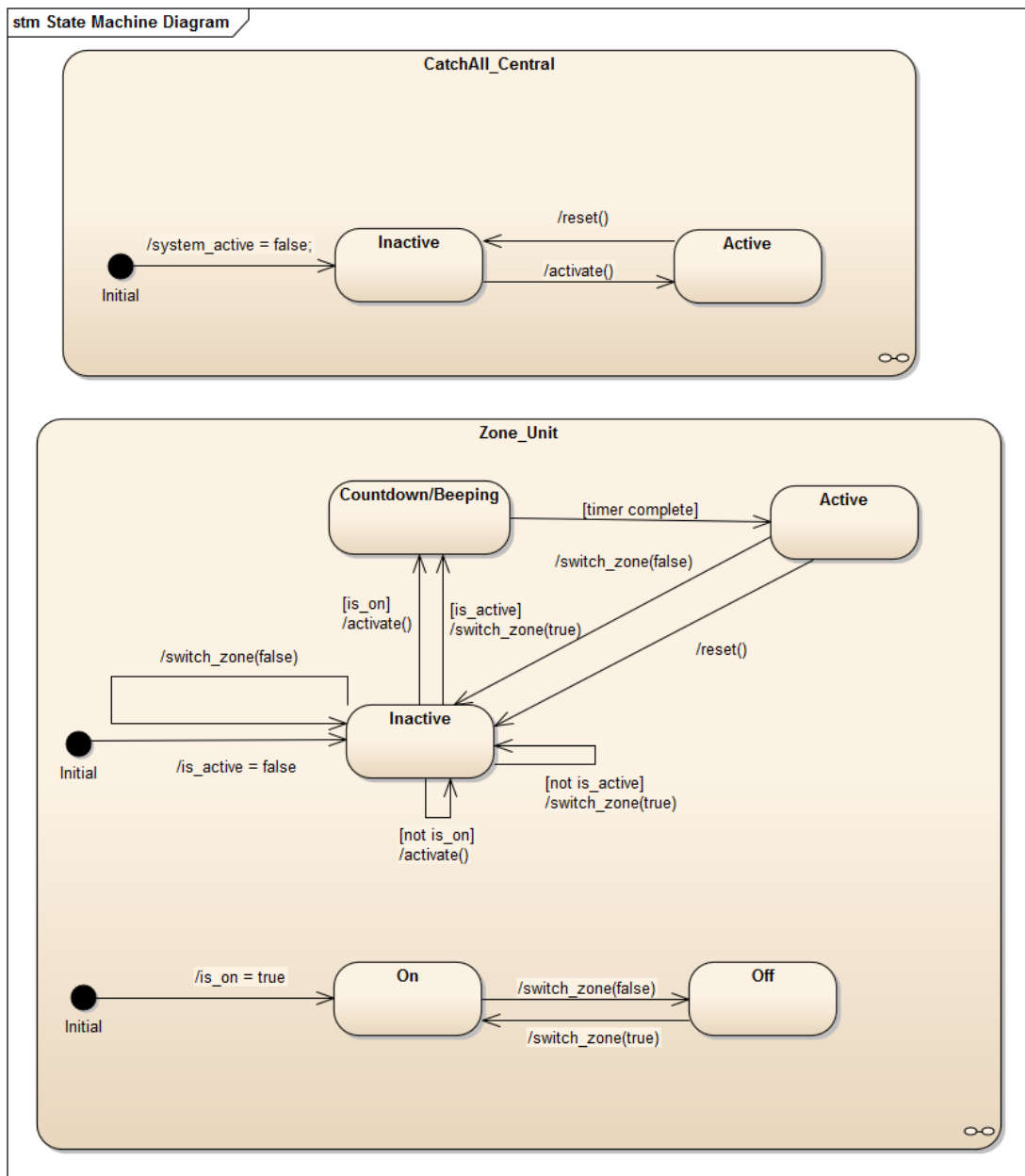
Part 1   Part A

Task 1.1   Exercise 1

Task 1.2   Exercise 2

class Class Model

Monitor
- id :Mobile_Number
+ alert(int) :void

0..1   controlling ▶

Camera
- id :int
- locationDescription :text
+ getVideoStream() :Stream
+ pan(float, float) :void
+ zoomBy(float) :void

Might choose to use interfaces for Camera, Flasher-Sounder, and Sensor to better support different hardware for these components.

1..*

registered with ▼

connected to ▼

0..2

1

CatchAll_Central
- id :int
- system_active :boolean = false
- code :Code
+ switch_zone(zone_unit, boolean) :void
+ trigger(Zone_Unit) :void
+ soundAlarm() :void
- activate() :void
- reset() :void
+ enterCode(Code) :void
+ requestCameraControl(Mobile_Number, zone_id, camera_id) :Camera

◀ connected to

1   1..16

Zone_Unit
- id :int
- locationDescription :text
- is_active :boolean = false
- is_on :boolean = true
+ switch_zone(boolean) :void
+ activate() :void
+ deactivate() :void
+ trigger(int) :void
+ soundAlarm() :void
+ reset() :void

◀ connected to

1   0..2

Flasher-Sounder
- activated :boolean = false
+ soundAlarm() :void
+ reset() :void

Distinction between CatchAll System and Central Control Unit not important as they are one-to-one so have folded these together in design.

connected to ▲

1

0..8

Sensor
- id :int
- locationDescription :text
- triggered :boolean = false
+ trigger() :void
+ reset() :void

No need to distinguish different sensors in design. No info on how configurable sensors are configured: may be a hardware only setting, e.g. knob on sensor.

Task 1.3   Exercise 3

Part 2   Part B

Task 2.1   Exercise 4

This is really 4 sequence diagrams in one: (1) trigger (2) alert (3) reset (4) deactivatezone/activate.

Jessica

jessApp:App

ccu:CCU

zoneList :ZoneUnit

sensorList :Sensor

alarmList :Flasher-Sounder

officeZone :ZoneUnit

movementDetector :Sensor

William

sees alert

enters the code

showAlert()

enterCode(code)

return true

reset()

alert(id)

*reset()

activate()

*activate()

*activate()

enters the code

enterCode(code)

*soundAlarm()

alarmTriggered(id)

*reset()

reset()

*reset()

deactivateZone()

reset()

trigger()

Assume code is correct

The sensors and zones that is not the movement detector and the zone William is in

* denotes that the function is run on all elements

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