11 April 2014 Software Design Lecture Notes

**Final Exam will be in class on Friday, 16 May 2014**

**Midterm Exam will be in class on Friday, 18 April 2014**

Closed book, closed notes, about 1.5 hours goal. Covers chapter 1 & 2 of book. Context models including sorts, model view control, other perspectives. Architectural Concepts, Use Cases, and Deployment. Interactions of these concepts. A question regarding our projects. The 2 assigned journal readings – why they’re important.

**Homework Assignment due 25 April 2014**

Journal reading: D. Parnas “On the Criteria to be Used in Decomposing Systems into Modules,” CACM December 1972. Be prepared to participate in a led discussion about the article.

**Project Tasks to be Performed**

Complete a Rapid Prototype of Skeletal Functionality (Some MAJOR part) to show feasibility & perhaps show design decisions that exposed/solved issues. Demo the prototype on 2 or 9 May class on laptops, smartphones, iPods, etc.

**Lecture**

Database Model:

Plant

Plant ID

Genus

Species

Common Name

Usage

Name

0..\*

0..\*

Use Case 1:

* Create an object for each plant
* Record attributes required now or in the future
* Create Usage Objects
* Specify Relationships between plant and Usage objects

Use Case 2:

* Pick a Plant Object (or a sequence of them) and find the attribute values of each
* Find all the usage objects related to that (those) plant objects

Use Case 3:

* Pick an Usage Object and find all its related plant object

Revisions:

Species

Species ID

Species Name

Common Name

Usage

Name

0..n

0..n

Genus

Genus Name

1..1

1..n

Use Case 4:

For all Genus Objects:

* Write out name
* Find all associated species objects
* For all Species Objects:
  + Write out name

Use Case 5

For all Usage Objects:

Similar

Start Data Modelling with Use Cases

Observe if inputs and outputs are separated

Decompose