Practical Workshop 4
Estimation Workshop

This exercise is designed to provide practice in estimation techniques and to demonstrate some issues which impact upon project scheduling. It is hoped to stimulate some thoughts and discussion.

1. Name of Group _______ (Any combination of letters will do, providing you can remember them)

Have a look at the requirements for an Object-Oriented Workplace Laboratory (OWL) system as specified in your textbook (Bruegge & Dutoit, p432). The task is to estimate the amount of effort that would be needed to write the system. Note that the text gives a useful Work Breakdown Structure with arbitrary (made-up) times on page 435. Work together as a pair and agree upon each answer before filling in your own personal work sheet.

2. How much effort would be required for your group to write such a system in Java? _____________(person-days)

3. On what date do you think your group (of two or three people working full time) could deliver it, if you started today? _____________

4. How did you go about obtaining the estimate?
________________________________________________________
________________________________________________________
______________________________________________

5. What might a commercial organisation be able to provide, that would assist you to produce a better estimate?
______________________________________________________

6. How accurate do you believe your estimate is? _________(+ or - %)

7. What sorts of bias or errors might there be in your estimate?
________________________________________________________
________________________________________________________

8. The tutor will now provide a summary of the class’ estimates. In the light of the figures, you may wish to update the figure you gave in question two to _____________(person-days)
9. How might you go about measuring the size of such a system – and what units would you use?

10. Using the units chosen in question nine what size do you believe OWL will be?

11. What problems might be involved in converting your units into Lines of Code (LoC) ?

12. Suppose that you have data from the last four Java projects your group produced:

   A 1200 LoC 23 Person-Days
   B 1800 LoC 38 Person-Days
   C 2700 LoC 58 Person-Days
   D 4800 LoC 107 Person-Days

Use this data to estimate how much effort it will take to produce the system based on your count from question ten: __________(person-days)

13. Compare the results from questions two, eight and twelve. Comment on any differences:

14. Make a note to yourself about any aspects of software estimation that are worth further investigation. What could be done to improve your project estimation?

The result of project estimates is heavily dependent on the information available, constraints, assumptions and external pressures at the time the estimate is made. As projects progress, more information becomes available and you will be able to produce more accurate schedules.
Project 1 OWL

A current trend in the building industry is to provide distributed services and control for the individual occupant as a strategy to correct the over-reliance on large centralized systems that characterize office buildings built in the last 30 years. At the Intelligent Workplace (IW) workers will have more control over their environmental conditions—adjusting light level and temperature of their workspace, reducing glare, controlling speed and direction of air flow delivered to the workspace. An energy-efficient façade will allow for fresh air ventilation from operable windows and incorporate movable shading devices that adjust to minimize glare and maximize natural lighting of the workspace.

It is desirable to adopt three forms of control in the Intelligent Workplace: responsive, scheduled, and user driven. Responsive control is when the system reacts to a change in sensor reading by actuating some components. Scheduled control can be adopted in the presence of predictable data that allows the components to be directly controlled by a carefully designed schedule. For example, because the position of the sun is predictable, a schedule for the interior shades of the IW can be adopted. Control system should be flexible enough to respond to the needs of the occupants. If they would like to change the temperature of their local environment, they should be given that opportunity.

In this project you are asked to build a system called OWL that attempts to improve the way we deal with buildings.