1999/2000 HONOURS YEAR PROJECT PROPOSAL

*Please return the completed form to **Ms Cheryl Lee** by **21 May 1999**.*

SoC Advisor Name :	**Leong** Hon Wai	Phone : 874-2903	Email : leonghw

External sponsors (*if any*) :

Project Category: ***Either Hon or Hon/MSc***

Project Title: ***A Robust, Scalable, Client-Server Architecture for RAS Applications***

Project Description (*Hon-part followed by MSc-part (if any)) :*

Resource Allocation and Scheduling (RAS) applications are typically characterized by their high computation needs unlike most enterprise computing applications where the main performance bottleneck lies in the database. However, with the availability of low cost PCs and open source OSs (eg. Linux) providing clustered computation on the cheap, there is now the opportunity to deploy scalable RAS applications at a reasonable cost.

In a previous project, a 3-tiered client-server architecture was established for this purpose. Central to this architecture is the *Resource Manager* whose main task is to allocate available application servers to requesting clients. However, due to the time frame allotted, many assumptions regarding fault tolerance and load balancing were made.

(**Honours-Project-Part**) The objective of this project develop a working prototype of this 3-tier client-server architecture as proof of concept. In this prototype, the Resource Manager will take into consideration the standard issues such as naming service, fault tolerance, and load balancing.

(**The-Optional-MSc-Part**) This project can be extended to an MSc project. For the MSc part, the project will study multiple optimized schemes for fault tolerance and load balancing.

Start Date: ***ASAP*** Duration: ***8 months*** Allocation (by bidding?): ***Interview***

Lab: ***RAS Garage (S15,03-15A)*** Coord: **Leong** Hon Wai Signature / Date:

Req. / Avail. of HW / SW: *Unix/PC, C++, Java, VB, Basic Networking (Socket Programming)*

Knowledge / skill required: *Good system design skills, analytical skills,*
Knowledge of C++/Java especially socket programming.
Good working attitude and motivated to learn new things.

Benefits / Significance of Project: *Practical experience with software architectural design and impl.;*
Valuable start for prestigious "System Architect" positions.

Please ask TWO SoC staff members (Lecturer/Fellow or senior) to review the project.

Reviewer Name:	Reviewer Name:
Comments:	Comments:
Signature/Date	Signature/Date