



Project Guide
Group Project I (SCS 2102/ IS 2002)
Computer Science & Information Systems Streams

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Introduction

Second year group project is a compulsory course unit for the students from both CS and IS degree programs. It is to apply theoretical knowledge students gained throughout the first year of study and experience the real world application of software engineering concepts. Project duration is 1 year and hence, students are expected to cover considerable amount of work and also to cover important aspects of software development life cycle. At the end of the year, student's final mark will be evaluated based on what the group has done and also the individual contribution throughout the period of project span. Coordination process attempts to help students to gain maximum out of this project by guiding them through a coordination framework and this document describes the internals of the coordination framework.

Objectives

Students are expected to apply theoretical knowledge they gained, experience the true nature of software development and in turn improve themselves in all aspects of software engineering. As a summary, objectives of this course unit can be given as follows.

- Working in a challenging and demanding software development environment
- Experiencing the system development life cycle
- Covering substantial technological scope
- Developing analytical skills
- Enhancing modeling and designing skills
- Augmenting knowledge in software engineering technologies
- Practicing software quality assurance aspects
- Improving communication and presentation skills
- Experiencing industry standards, best practices and develop professionalism

Group Composition

As previously mentioned, the students are expected to move out of their comfort zones and accept challenges. The real software engineering or development environment in industry is quite competitive and anybody who joins this industry has to be adapted for the challenging environment. The environment demands dynamic personalities with not only the technical skills but also the non-technical skills such as team work, helping each other, adaptability, reliability, etc. A new employee or trainee is hired and assigned to a team/group as a management decision and the new employee/trainee has to adjust himself while delivering team's expectations. Thus, adhering with typical industry behavior, students are allocated to the groups by the course coordinator. Though randomization is the main focus, the allocation process takes number of other aspects in to the consideration in order to ensure all groups are equally competent.

Stakeholders

- Group Members (Students - CS & IS)
- Supervisor
- Mentor
- Client

Role of the Supervisor

Each group has a supervisor who is an academic staff member of University of Colombo School of Computing. Appointment of supervisors to groups is done by the course coordinator. Supervisor is to guide and assist a group during the entire period of project span to make it a success. As a group, students are advised meet their supervisor (mentor in case of supervisor unavailability) customarily and decide their project directions collectively. There is no specified format for these meetings. The requirement is all the group members know project status and its direction. Thus, when students are unable to have face-to-face meetings, contact can be maintained by means of emails, calls, etc.

Role of the Mentor

Each group is assigned a mentor who is also an academic staff member of University of Colombo School of Computing and the course coordinator nominates mentors for groups. Mentor may play an advisory role parallel to the Supervisor, but more informal and open manner. It is a good practice to invite mentor to group meetings and conduct meetings in a professional way. It'll help mentor to understand project directions and give his/her feedback without any delays.

Project Scope, Proposal and Selection

Group members (including supervisor) have to discuss and find out a real-world problem in order to propose a software solution. The supervisor and members of a group should ensure the proposal covers substantial scope. Scope of the proposed project is one of the key areas that will be evaluated during the preliminary presentation. Thus, failure to cover sufficient scope will result to revise the project proposal.

Expected Outcomes and Deliverables

- Biweekly report – Softcopy only
- Preliminary presentation
- System's requirements analysis and design document – Softcopy only
- Interim presentation
- Final presentation and demo
- Working System/Software
- Member contribution report – Softcopy only

Evaluation Criteria

1. Biweekly team meetings (a team should maintain a satisfactory number of team meetings.)
 - a. **Weight – 0 Marks**
 - b. Task – Maintaining a project diary, what were discussed, who took the responsibility of which part, (Group)
 - c. Criteria - (Noncompliance == 0 marks for all group components)
 - i. Biweekly report submission
2. Problem identification, Requirements gathering, Initial Analysis and Planning
 - a. **Weight – 10 Marks**
 - b. Task – Presentation (Group)
 - c. Criteria –
 - i. Feasibility study
 - ii. Project scope
 - iii. Prepare an initial requirement specification
 - iv. Identification of use cases
3. Requirement Analysis and Design
 - a. **Weight – 10 Marks**
 - b. Task – Document submission (Soft copy only) (Group)
 - c. Criteria (The document covers number of aspects of the proposed system. It is a complete document of your requirement analysis and design)
 - i. Introduction about the project
 - ii. Goals/Objectives
 - iii. Feasibility study
 - iv. Functional & Non-Functional Requirements
 - v. System architecture
 - vi. Components/Modules
 - vii. Use Case/Class Diagrams
 - viii. Any other relevant diagrams
4. Interim Presentations
 - a. **Weight – 15 Marks**
 - b. Task – Presentation (Group)
 - c. Criteria
 - i. Scope
 - ii. What you have done?
 - iii. Remaining work?
 - iv. Development plan
 - v. Testing plan
 - vi. Deployment plan
5. Final Presentation & Demonstration
 - a. **Weight – 25 Marks**
 - b. Task – Presentation & Demonstration (Group)
 - c. Criteria
 - i. Requirements Agreed

- ii. Delivered
 - iii. Architecture of the system
- 6. System Development
 - a. **Weight – 10 Marks**
 - b. Task – Viva (Group)
 - c. Criteria
 - i. Comply with design and overall architecture
 - ii. Modularized system development
 - iii. Database design and implementation comply with the design
 - iv. Best practices
 - v. Testing
 - vi. Version controlling
- 7. Individual Contribution
 - a. **Weight – 30 Marks**
 - b. Task – Viva (Individual)
 - c. Criteria
 - i. Active participation in all stages of the project life cycle
 - ii. Taken responsibilities and completed in a satisfactory level
 - iii. Substantial contribution has been made
 - iv. Code inspection or Database design/implementation aspects
 - 1. Coding standards
 - 2. Best practices
 - v. Supervisor recommendation

Note - Criteria items published in this document are solely for the information purpose and subject to change. In case of such changes, it will be informed to the students via LMS.

Advisory Panel

The advisory panel is to help and advice students for the matters that they cannot resolve within the group (i.e. difficulties they face due to group dynamics, difficulties with process enforcements or any other grievances). The panel consists of four members as given below. Furthermore, the panel may consult Prof. K.P Hewagamage if necessary.

- Kasun Gunawardana
- Manjusri Wikramasinghe
- Chathura Jayalath
- Chathurika Silva

Other Notes

1. Modern day software development has been simplified and become easy due to the advent of numerous software frameworks, libraries, APIs, etc. However, students are advised to use only

the **essential** such software platforms for their project development. Since this is the first time students explore their theoretical knowledge in practice, it is always good to understand the real concepts and behaviors behind the technologies. Once students understand the underlying concepts they will be able to adapt to any technical environment. In contrast, usage of these versatile software tools/techniques will deprive students of opportunity to understand the core concepts and behaviors of the most of the technologies. Thus usage of such versatile tools/techniques in project development is not encouraged. However, it is not totally prohibited and such usage should be decided by the group and the supervisor. During the evaluation, exploitation of such versatile software tools/ techniques will be taken in to the consideration and expectations would be high for the groups who employ such tools/techniques.