TEAM CONTRIBUTION SYSTEM (TCS)

DATABASE IMPLEMENTATION

Semester 1, 2015

PROJECT GUIDELINES:

This document serves as project description for Database Implementation project.
This is a group project.
Each group should consist of 4 students.
Submit softcopy of the project's source code at the end of the semester.
Submit softcopy and hardcopy of database design documents, project management documents, peer assessment form and user manual at the end of the semester.

Within Swinburne University, a number of study units include group / team-work assessments. Team-work assessments are used for a variety of important reasons, such as:

- Enable students to be involved in larger-scale, more complex and more open ended tasks than they could manage on their own.
- Develop students' team work skills, and other skills such as leadership, negotiation, conflict resolution, time management, problem solving and oral communication
- Foster a culture of co-operation and collaboration expected in real-world employment settings.

Although team work offers numerous benefits to the students, the fair and accurate assessment by academics of group work is often found to be quite challenging. In order to ensure fair and accurate marking for team work, team members may get differential marking based on their individual contribution. Consequently, students may require submitting peer assessment or other forms of team evaluation to rate the contributions of all team members.

To facilitate the process of team work assessment, you are required to develop a multiuser, client/server Team Contribution System (referred as TCS hereafter) for Swinburne University that enables:

- Students to submit team contribution and various other forms of peer assessments, and
- Academics to review students' performance and offer more accurate and fair marking based on students' individual contributions.

The following sections provide more details on the functional requirements of TCS. (See Appendix A for an overview of TCS)

REQUIREMENTS OVERVIEW

Objective of developing TCS is to facilitate the following 4 roles:

1. Admin role
2. Convenor role
3. Supervisor role and
4. Student role

The following section describes the functional requirements for the abovementioned roles

1. ADMIN ROLE

Admin is responsible to setup the system by creating initial records for new employees including convenors and supervisors, students and units of study. Key tasks required for admin role include

1.1 REGISTER NEW EMPLOYEE (CONVENOR/SUPERVISOR/ADMIN):

The following data should be created for each new employee includes:

- Employee id (PK – Max of 8 characters)
- Employee Role (NN)
- First Name (NN)
- Last Name
- Username (NN)
- Password (NN)
- Email (U)
- Contact No

Actions Allowed:

QUERY INSERT UPDATE DELETE

Special Processing:

Further to the manual entry into this form, extra functionality should be available to import data from a.csv file containing employees' (convenor/supervisor/admin) data.

Validation:

Do not allow DELETE, if the given employee id is used in any other table

For UPDATE operation, apply UPDATE CASCADE if the given employee id is used in any other table

1.2 REGISTER UNITS OF STUDY:

The following data should be created for each new unit of study:

- Unit id (U,NN Max of 10 characters)
- Unit name (NN)
- Unit description

Actions Allowed:

QUERY INSERT UPDATE DELETE

Special Processing:

Further to the manual entry into this form, extra functionality should be available to import data from a.csv file containing units' data.

Validation:

Do not allow DELETE, if the given Unit id is used in any other table

For UPDATE operation, apply UPDATE CASCADE if the given Unit id is used any other table

1.3 REGISTER STUDENT:

Admin must be able to register new students. Unless this step is successfully performed, it would not be possible to form students' teams and to allocate them their supervisors. Student's data can be recorded in the following data fields.

- Student id (U,NN Max of 10 characters)
- First name(NN)
- Last name
- Email
- Contact no

Actions Allowed:

QUERY INSERT UPDATE DELETE

Special Processing:

Further to the manual entry into this form, extra functionality should be available to import data from a.csv file containing students' data.

Registered students should also be able to enrol into the registered unit/s (see ENROL STUDENT table for more details)

Validation:

Do not allow DELETE, if the given Student id is used in any other table

For UPDATE operation, apply UPDATE CASCADE if the given Student id is used any other table

1.4 ENROL STUDENT:

This table should be used to record data related to the enrolment of a student in a particular table.

The following data should be created for the enrolment process

- Student id (NN Max of 10 characters)
- Unit id (NN)
- Semester
- Year

Actions Allowed:

QUERY INSERT UPDATE DELETE

2 CONVENOR ROLE

Convenor is the 'owner' of the unit who is responsible to form teams of students, set assessments, prepare team contribution forms and assign supervisors to each team of students. A convenor must also be able to view all activities at supervisor and student level at any time. Key tasks required for this role include:

2.1 REGISTER TEAMS

Unit convenor is also responsible to register teams of students to a particular unit of study. Only registered students can be assigned to a team. The size of the team may vary from 2 to 12.

- Semester (NN)
- Year (NN)
- Unit id (NN)
- Team id (NN)
- Student id (NN)

Actions Allowed:

QUERY INSERT UPDATE DELETE

Special Processing:

Allow convenor to change the team formation (add/remove team member) at any time without losing any previous information

Validation:

Do not allow DELETE, if the given Team id is used in any other table

For UPDATE operation, apply UPDATE CASCADE if the given team id is used any other table

2.2 REGISTER PROJECTS

The Convenor of a study unit is also responsible to register new projects on TCS. Projects registered at this stage would later be allocated to registered team/s of students. Following information should be recorded for each project

- Semester (NN)
- Year (NN)
- Unit id (NN)
- Project id (NN)
- Project description (NN)

Actions Allowed:

QUERY INSERT UPDATE DELETE

Special Processing

Project description should be stored as text or link to an external file such as .doc

Validation

Do not allow DELETE, if the given Project id is used in any other table

For UPDATE operation, apply UPDATE CASCADE if the given Project id is used any other table

2.3 SETTING UP THE TEAM CONTRIBUTION ASSESSMENTS

By using this form, the convenor of a study unit can set up an assessment task that will record students' contribution in a team. Assessment tasks details, their marking criteria and due dates should be recorded at this point (see Appendix C for a sample Peer Assessment Form). Following data fields could be used to record important information.

- Semester (NN)
- Year (NN)
- Unit id (NN)
- Assessment id (NN)
- Assignment Title (NN)
- Assessment description (NN)
- Individual/group

- Marking guide (NN)
- Due date (NN)

Actions Allowed:

QUERY INSERT UPDATE DELETE

Special Processing:

Cater the need to record assessments with varying structures and marking criteria

Validation:

Do not allow DELETE, if the given Assessment id is used in any other table

For UPDATE operation, apply UPDATE CASCADE if the given Assessment id is used any other table

2.4 TEAM ALLOCATION

Once the supervisors, projects and student teams are successfully registered in TCS, the convenor can assign a registered project and supervisor to the team of students. You may consider the following data fields to save the required information.

- Semester (NN)
- Year (NN)
- Unit id (NN)
- Team id (NN)
- Project id (NN)
- Employee id (NN)

Actions Allowed:

QUERY INSERT UPDATE DELETE

Special Processing:

Allow convenor to change the team, project and supervisor without losing their previous relevant information.

Validation:

Make sure that only registered supervisors and projects can be allocated to registered teams of students.

3. SUPERVISOR ROLE

In TCS, supervisor is responsible to supervise one or more teams of students and interact with them in form of weekly meetings and alike. In most of the cases (subject to convenor's preference), a supervisor is required to mark students' assessments and provide feedback on their progress. Some of the important tasks for this role include

- Book, conduct and record details of regular (weekly) meetings with students' teams
- Mark and review students' peer assessments and minutes of the meetings (see Appendix B for a sample)
- Provide feedback to individuals and to the teams

Supervisor's tasks can be represented in the form of following data fields. 'Setting up students meeting' functionality should be shared between Supervisor and student.

3.1 SETTING UP STUDENTS MEETING

- Semester id (NN)
- Employee id (NN)
- Year (NN)
- Unit id (NN)
- Team id (NN)
- Meeting date (NN)
- Meeting start time (NN)
- Meeting finish time (NN)
- Meeting Agenda
- Action Items
- Meeting Minutes
- Attendees
- Absentees

Actions Allowed:

QUERY INSERT UPDATE

Special Processing:

Some information such as meeting time should be shared with relevant teams. However the access to that information may change or restrict before or after the meeting.

Request for meeting could be initiated by students or by their supervisors.

Validation:

Check for conflict in meetings time.

4. STUDENT ROLE

For team work assessment, each student is assigned to a team and responsible to submit peer assessment according to the unit guidelines. The following tasks need to be considered for the student's role.

- Attend supervisory meetings
- record meeting minutes
- record action items
- submit team contribution assessments

4.1 Team meetings

The following data fields might be required to record information relevant to the student role.

- Semester id (NN)
- Year (NN)
- Unit id (NN)
- Team id (NN)
- Meeting date (NN)
- Meeting time (NN)
- Meeting Agenda
- Action Items
- Meeting Minutes
- Attendees
- Absentees

Actions Allowed:

QUERY UPDATE

Special Processing:

Meeting agenda must not be editable once the meeting date & time has passed. Meeting minutes must not be editable once approved by the supervisor.

Validation:

Information in Teams' meeting should be shared among students of a team, their supervisor and the convenor of the unit.

4.2 Submit Team Contribution

According to the unit guidelines, students should be able to submit individual and team work assessments such as Team Contribution Statement (Worklog) as shown in Appendix D. It is important to enforce business rules (enquire detailed business rules during your meeting with the client and with the project supervisor) on who can access and view those assessments – within the team or outside the team. Following data fields may be consider to record relevant information

- Semester id (NN)
- Year (NN)
- Unit id (NN)
- Assessment id (NN)
- Date submitted (NN)

Actions Allowed:

QUERY UPDATE

Special Processing:

According to assessment guidelines, allow students to view their individual and/or team progress at any given time

Validation:

Do not allow UPDATE operation once an assignment is submitted. However students can view their submitted work at any time.

BASIC REQUIREMENTS:

Data Entry:

Your program should be able to record, retrieve, update and delete the required data in the tables (mentioned in section 1-4) via appropriate user interface.

Data manipulation:

Your program should be to

- Apply data validation rules to record, retrieve update and delete data
- Automate data transfer from one table/form to another such as in case of mater/detailed forms.

Reporting:

Your program should be able to generate following reports:

- List of registered convenors and units of study
- List of students enrolled in a unit of study
- List of registered supervisors
- List of registered projects
- List of registered teams of students including number of teams listed in one unit and details of students in each team.

ADVANCED REQUIREMENTS

Data entry:

Your program should be able to:

- Apply special processing mentioned in section 1 - 4

Data manipulation:

Your program should be able to:

- Apply appropriate access levels based on a particular role.
- Implement all the business rules relating to TCS
- Process student's evaluation based on peer assessment

Reporting:

Your program should be able to generate the following reports

- Summary of students' team including team members, supervisor and project assigned
- List of assessment tasks
- Timeline of future assessments

- Summary of assessments submitted
- Summary of Team contribution
    - For a given team
    - For a given student
    - For a given period of time
    - For a given unit of study
- Meeting summary

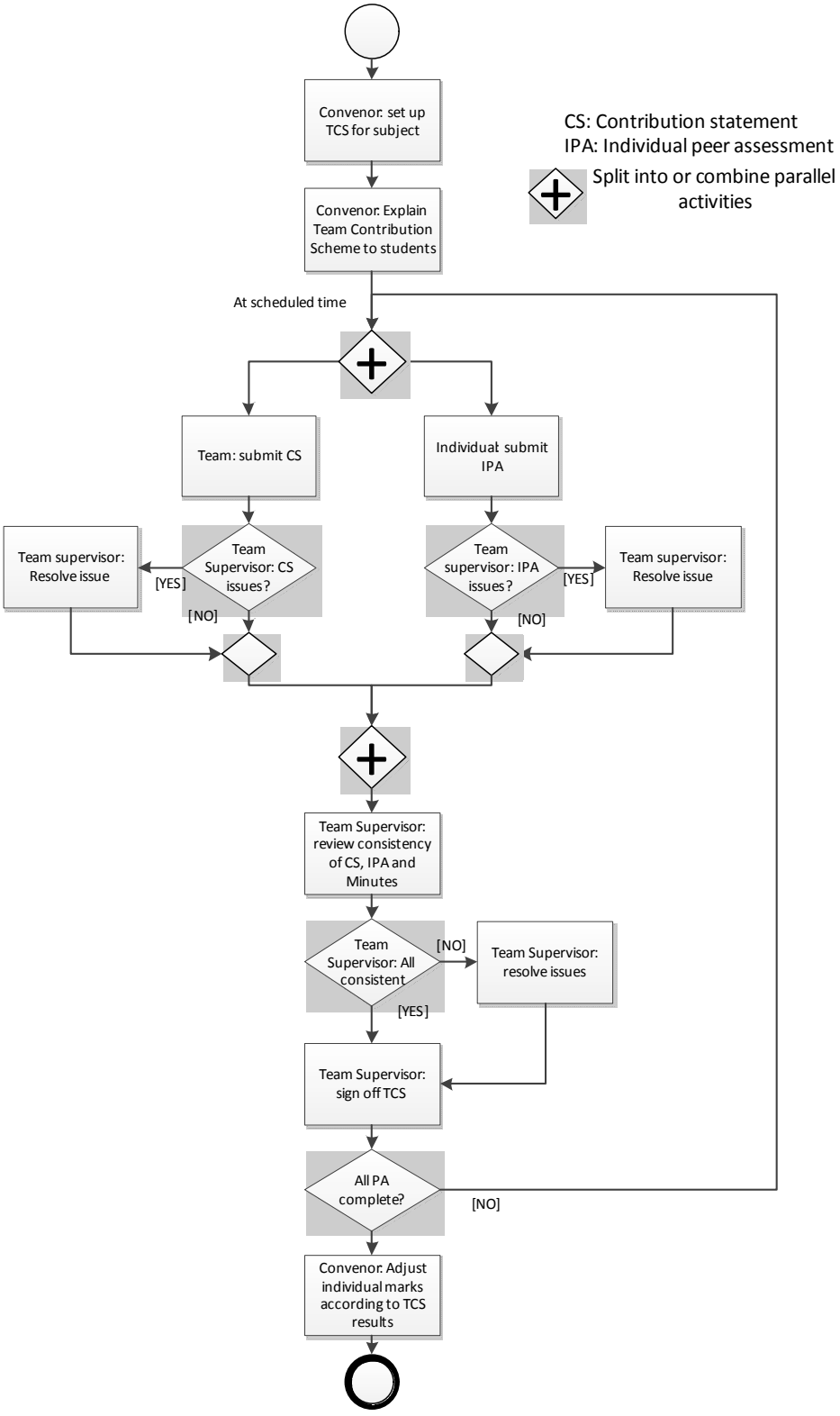
IMPORTANT CONSIDERATIONS

- Your schema may vary from the schema provided in the document - if required.
- Please note that data fields mentioned in this document are NEITHER normalized NOR the exact physical design for TCS. These data fields provide more like a conceptual design by providing information about the important data that should be stored in the system.
- You are required to normalize (up to 3NF) of the physical design and thus allowed to add new database tables/fields or delete the existing ones – if required.
- You are required to select appropriate data types for these fields.
- You are required to apply appropriate constraints – where applicable.
- You are required to select appropriate size for these fields.

Your project would be evaluated based on:

- *Correct database design/implementation.*
- *Implementation of business rules.*
- *Concurrency control.*
- *Implementation of the functionality mentioned in this document.*
- *Maintaining data integrity - In other words, all primary key values must be unique, and all foreign key values must match a value in the referenced table (or be null).*
- *Error/exception handling.*
- *Ease of use of the system (appropriateness of GUI).*
- *Use an appropriate template for reports.*

APPENDIX A


Convenor: set up TCS for subject
Convenor: Explain Team Contribution Scheme to students
CS: Contribution statement
IPA: Individual peer assessment
Split into or combine parallel activities
At scheduled time
Team: submit CS
Individual: submit IPA
Team supervisor: Resolve issue
Team Supervisor: CS issues?
[YES]
[NO]
Team supervisor: IPA issues?
[YES]
Team supervisor: Resolve issue
[NO]
Team Supervisor: review consistency of CS, IPA and Minutes
Team Supervisor: All consistent
[NO]
Team Supervisor: resolve issues
[YES]
Team Supervisor: sign off TCS
All PA complete?
[NO]
Convenor: Adjust individual marks according to TCS results

APPENDIX B

Meeting Minutes

Group name, date, and place (if it changes)

Action list from last meeting	**Person**	**Date**	**Status**
A description of any action that someone committed to work on or complete before the next meeting	The person or group who committed to the action	Date and time for completion or ASAP, soon, or next week.	Completed or not Any other relevant information

Present

Axxxx, Bxxxx, Cxxx (Chair),

Dxxxxx*
*Absent

Agenda Items

- Xxxxxxxxxxxxxxxxxxx
- Xxxxxxxxxxxxxxxxxxxxxx

Discussion, decisions, assignments

First agenda item.Xxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxx.

Second agenda item.Xxxxxxxxxxxxxxxx.Xxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxx.

Additional items.Xxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxx.Xxxxxxxxxxxxxxx
xxxxxxxxxxx.

Agenda items for the next meeting

- XxxxxxxxxxxxxxxXxxxxXxxxxxxxxxx
- XxxxxxxxxxXxxxxxxxxxxx

Follow-up action	**Person**	**Date**
Next meeting	All	Date, time, place (if it changes)
A description of any action that someone committed to work on or complete before the next meeting	The person or group who committed to the action	Date and time for completion or ASAP, soon, or next week.

APPENDIX C

Swinburne University of Technology

Faculty of Information and Communication Technologies

Peer Assessment Form

Your Name:		**TEAM ID:** **Date:**			
General Aspect	**Specific Aspect**	**ME**	**Name**	**Name**	**Name**
Group Process	Attended a large majority of group meetings				
	Maintained contact with other group members				
	Communicated constructively to discussion				
	Generally was cooperative in group activities				
	Encouraged and assisted other group members				
The Tasks	Made a genuine attempt to complete all jobs agreed by the group				
	Made an intellectual contribution to the completion of tasks				
	Did their fair share of the work				
	Read and commented in a timely manner on any documents				
	Contributed a significant amount (measured in ideas as well as in writing) to any required documents e.g. reports or presentations				
Overall	**Based on your ratings and comments above, this student's contribution overall since the last assessment?**				
	1 – did not contribute in this way| 2 – willing but not very successful | 3 – average | 4 – above average | 5 – outstanding				
Assume that your group receives $100 for you project. How would you divide this money among all the group members (including yourself) based on the contribution to the project since the last assessment?					

Comments:

APPENDIX D:

Tasks \ Team Members	A			B			C			D		
	1	2	3	1	2	3	1	2	3	1	2	3
Team and supervisor meetings												
Client meetings (preparation, attending, follow up)												
Team management and administration												
Research searching, analysing, modelling												
Software evaluation, development, testing												
Presentations Preparing, delivering, revising												
Team Documents Writing												
Reviewing Checking and correcting other's work												
Total hours for each time period												
Total hours for project												

TEAM ID:

Member's Name	**Members Signature**

- Each column headed 1, 2, 3 represents one time period
- State the number of hours spent in that time period
- It is not necessary that a member contributes in every area. It is a member's total contribution to the project for the entire project that is important.
- Round off contributions to tasks to nearest hour
- Do not include time spent on individually assessed tasks such as journals

	1	2	3
A:			
B:			
C:			
D:			
End date of Period			
Supervisors Signature			
Date			

- All members must agree to and sign for each time period
- Record the end date of the time period for which you are signing
- The supervisor will sign off and record the date on which he/she signed off when satisfied that the contributions appear to fairly represent each person's time contribution to team based tasks.