

## miPads Supply Chain Management Project – Phase 2

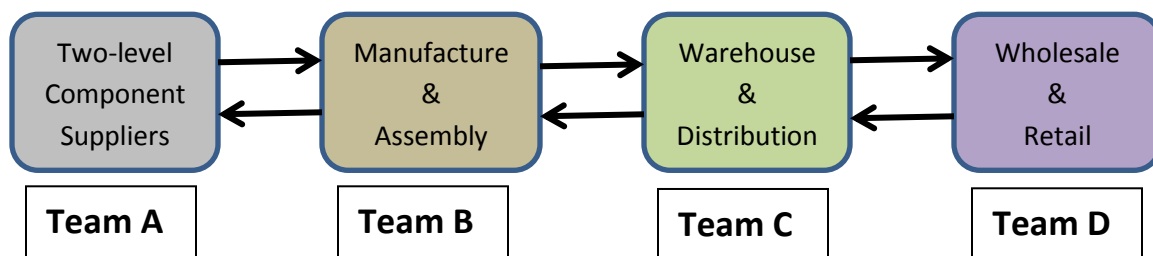
### INLS623-001 Spring 2013

The first phase of the project is over. Everyone gave a good description about the SCM requirements for the manufacturing, distribution and selling of miPads. Now that we know something about supply chains and what the information flow looks like, we go on to the next phase where we design the information structure for the miPads supply chain.

As noted in our project introduction, the second phase is the 'design' phase where you design the database and the processes needed for your part of the project. This phase is done as a team project. There will be four teams and each team will be charged with designing (and later developing) one aspect of the SCM framework. In this stage, for your part, each team will define the architecture, the modules and their roles in the architecture, and the database schema needed to implement the data model for the architecture. In this phase, you also, as a team, define the processes needed for your aspect of the SCM. This includes, external procedures (client-level), internal stored functions and procedures, and the views, triggers, assertions, domain and other constraints to make your part work. You also will define the interactions with other parts of the SCM project (being developed by other teams in class) and explicitly define how the interaction will occur. This phase will end in your team submission of a design report detailing the information infrastructure developed by your team.

So there will be two types of interactions. Each team will have internal discussions and make combined design decisions for their part of the project. The second type of interaction will occur between your team and two other teams (sometimes only one) about how the information interactions between the teams will occur in the supply chain management. Again, you will design all the necessary structures and processes needed to make this interaction happen. The design report should also contain information about this inter-team interactions.

The following diagram shows the teams and the interactions between the teams.



The teams will be made up as follows. There is no team leader. Everyone is equal and should contribute equally. All disputes will be arbitrated by the instructor. Send emails or come and talk to the instructor, individually or better as a team. Each team has at least one person who is familiar with programming. I have tried to make the teams of equal strengths and weaknesses so that there is parity among teams. I want each team to work well together. This is a team project. Everyone in the team will get the same grade, unless I see a problem with individual contributions. This is an opportunity to learn to work in a team. All of you have possibly done this before. I want cohesion and synergy. Try to resolve disputes by

talking to each other. Communications is important. As I said, I am always available if there is some problem which you cannot amicably solve. Of course, technical difficulties and other project level problems, you can approach me any time. Here is the team composition, alphabetically ordered by first names. Please exchange emails among yourself to keep in touch and with other teams with whom you will interact:

Team A: Erin Carter, Fan Jiang, Matthew Glassman

Team B: Jennifer Martin, Koushyar Rajavi, Lei Wang, Shumeng Gu

Team C: James Cox, Le Zhang, Mae Beale

Team D: Liuliu Fan, Mrudula Sudarsanam, Viet Nguyen

Even though these are four distinct teams, since this is a common project, interactions across team will be a must, I expect the teams to meet among themselves few times a week outside class and discuss and design. So, please arrange among yourselves on a schedule for meeting. Make a schedule, don't leave it to convenience. I expect that each team will spend at least four to five hours per week on this project phase in design meetings outside of class. Also, try to do a common half-hour meeting to meet across the teams. I will try to provide class time to do that (may be a few minutes at the end of class) but please do make arrangements to meet across teams. I am also planning on giving the whole class period of April 3<sup>rd</sup> for project discussions within and among teams. This might help to produce the report by April 5<sup>th</sup>. So, don't be absent for that class in particular as it may affect your team. If there is a problem, please communicate with me and your team. Communications among team members is important. I am hoping that we all learn and have positive experiences as we move through this phase.

I expect each team to make a two minute report in each class about progress. I also expect a short email each Friday from each team on progress made that week. Even if no progress is made, I expect a report in class as well as by email. Remember the time is short and I will try to give fewer home works. I am open to holding office hours for the project on other days apart from my regular office hours. We can discuss this in class for what is convenient for all.

This is a team effort. Each member is important and equal. But it also means, you all swim or sink together. Don't jeopardize your team. Good team spirit will be rewarding in more ways than one.

**Important Change in Time table:**

**Phase 2 due: April 5<sup>th</sup> Friday (by email)**

**Phase 3 demo: April 22<sup>nd</sup> (in class) (same date as before)**

Once you submit Phase 2, no need to wait for me to give feedback and results. Continue with implementation for Phase 3 demonstrations. I expect you to do implementations of the database, triggers and procedures as you proceed through the design phase (phase 2) itself. You may, with consultation with the instructor, implement and demonstrate only part of the Phase 2 design (instead of everything in the Phase 2 report).

Note: Team B has 4 members, because their work is a bit more central to the project and will play a larger role in the design. Even though Team B has more members, all teams are equal and will be graded equally.

## Phase 2 Design report:

I expect the report to contain the following:

1. An overall design description (1 to 2 pages) of your team work. It should also contain aims and expectations. You can also add any information about design decisions you made and how you will interact with other teams.
2. Table Schema for the team's part of the database. Should include primary and unique keys, foreign keys, constraints on deletions and updates, other constraints and checks. The table should be conform to Oracle syntax. So, test it in the database in Phase 2 itself. You can submit the Oracle create table statement as your schema. No need for ER diagram and or other pseudo-designs. If you are doing any other indices, please show the create index statements as part of the report.
3. For each table, write a short paragraph about what it is doing, its attributes and its relationship to other tables and its role in the project. If a table is used in interactions with other teams, please note that also.
4. Triggers that are needed to automatically perform operations in the supply chain management. I expect a large part of the SCM operations will be done through triggers. So, please spend time on this. I also expect interactions between the teams to be done as triggers. This implies that you will need to give insert, delete and select permissions for other teams on some of your tables, so that they can "update" your tables. For example, if a retailer orders 10 new miPads, retailer will make an insertion into their order table, but this insertion will trigger an automatic insertion into a new-orders table in the Distributor table. If the warehouse has the needed number of miPads in stock, then the distributor will immediately perform an automatic shipping action to satisfy the order. This in turn will reduce the miPads count in the warehouse stock and if that is below a certain level (say less than 100 in stock), then it will trigger an assembly order for say 500 miPads which will percolate through the manufacture and component and sub-component orders being placed. So, triggers will play a vital role. I expect triggers for both within team operations as well as inter-team interactions. More triggers, the better the design. But don't go overboard. You need to explain why you need it and why you can't do it any other way. As I said earlier, we can negotiate what to demonstrate and may be a subset of your design.
5. For each trigger give the trigger statement and an explanation about what it does. If any PL/SQL program or function is needed, at Phase 2, you can design and test it, or at least write a pseudo-code as part of the Phase 2 design. I expect to see the pseudo code or the PL/SQL function in the design report. These PL/SQL can be used as part of a trigger or as stored procedures used as part of select statements.
6. Show Create Views or SQL that you want to show for the demonstration. This will help in making you think of what to hide and what to show. I want at least two views. One is a CEO view, who is interested only at the very high level. So think what you want to show. The second is at the supply-chain manager view, who needs more nitty gritty details and may span across more than one team. (Don't do insertions, deletions or updates through views. Use only for selection).
7. Give an outline of the demonstration that will be done in Phase 3. This will be at the team level as well as inter-team level. Show "insert and or modify" statements that you will use to demonstrate your project, either internally for your group or across multiple groups. I don't need any fancy GUI to show the demo. Use begin, commits and rollbacks to make sure that you do things as a transaction.

8. Write a small note on team work. How you all collaborated and what positives and negatives you saw in this team-based work and for the project as a whole. Any experiences you had during this phase that stands out.

I will also have a separate document for each team to layout some ideas for their design and implementations. These will be suggestive and not prescriptive and hopefully used as a guide.

Well, this is a challenging phase but hopefully rewarding. If you do this well, phase 3 will be simpler and mainly polishing for the demo. There will be no Phase 3 report; just a demonstration. So, phase 2 is the heavy lift phase. Do a great job. Enjoy the experience.

Best of luck! Go Team!!