CS577a Fall 2002
HW#5: Model Clash
Due September 27, 2002
30 points

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This homework refers to last Friday's lecture by Mohammed Al-Said on Model Clashes (EC-08-2). In this homework, you will start identifying your project's model clashes.

Go through steps 1-6 below and submit the results on the Excel spreadsheet Model Clash form.

Steps:
1. Determine your project's stakeholders (OCD 2.2).
2. Go to any of your project's OCD sections and think about the various models that have led to the contents of that section. Choose two or more of these models to work with. (We suggest choosing models from the at least two different sections). Keep in mind that the sections themselves are not models. Each section is a placeholder for models of a particular type,
3. For each stakeholder make a best guess of some of the critical model assumptions, especially some that might be implicit or hidden.

Example: The project is the construction of a web-based retail product ordering system

Project Stakeholders: developer, client, maintainer

OCD Section 2.4: Major Project Constraints:
1. Project must be completed within 24 weeks.
2. Database must be implemented using mySQL or Oracle.
3. Web applications (server-side) must run under UNIX operating systems.
4. CGI is not allowed, and JSP is unsupported.

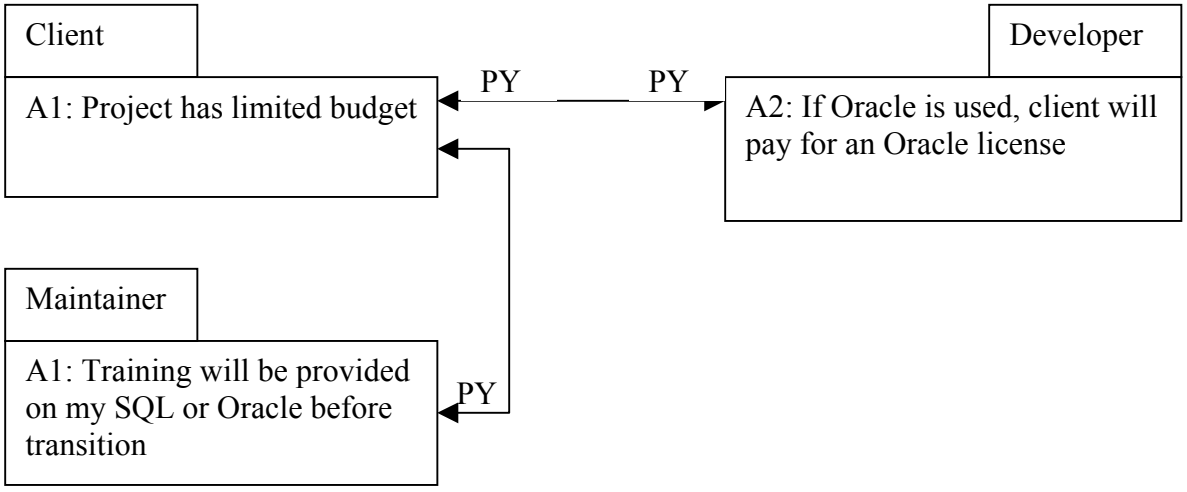
OCD Section 3.3: Current Organization Activity Model
1. Orders are processed at a certain rate, which varies depending on season.
2. Orders are packed and picked up by UPS for delivery

Note that the developers who wrote OCD 2.4 may have arrived at its contents as a result of WinWin negotiations, the development of a prototype, their interpretation of organizational policies, etc. Note further that some stakeholders might not have read the entire OCD carefully or may have read it but may have misunderstood certain parts or may have not considered all the implications of what they read.

Possible Assumptions: Some of the stakeholders' assumptions relevant to choice of a DBMS and its appropriateness might be:
Developer:

A1: Developer knows SQL, so both Oracle and mySQL are OK to use
A2: If Oracle is used, client will pay for an Oracle license
...
Client:
A1: Project has limited budget
A2: Developer isn't comfortable with any DBMS except mySQL and Oracle
A3: The new system's requirements, both capability and level of service, can be satisfied by using either mySQL or .Oracle.
A4: During the month of December, the rate of incoming orders is expected to be ten times the rate during any other month. [Note that this is a "hidden" assumption to developers]
...
Maintainer:
A1: Training will be provided on mySQL or Oracle before system transition
...
The actual list of assumptions can be large, so focus on the important ones that may affect your project's budget, schedule, and functionality.

3: Draw a spider-web diagram to identify model clashes. The following is part of a spider-web diagram (see EP-19) of possible model clashes for this example. Note that you can find the model classifications at the end of each section in the MBASE guidelines (version 2.3.7).



4: Assess the risk associated with each model clash using either your best guess or the "betting analogy" method (see EC-04-02) to get size of risk and probability of loss. For example, if we use our best guess, we might, based on our assessment that the maintainer is pretty experienced, and can probably learn whichever DBMS ends up being used, come up with a probability of risk of .25 for the maintainer's not being able to maintain the system without training in the DBMS. We might, based on our assessment that neither mySQL nor Oracle will need much maintenance, come up with a size of loss of 5 out of 10. The risk exposure would, therefore, be .25*5 = 1.25 out of 10.

5. Propose ways of dealing with the risks associated with each of the model clashes

Project team members are encouraged to discuss the homework with one another, but each team member must analyze different model elements (at least two per student).

Each student must submit this homework individually, and all team members' homework results must also be submitted as part of the team's Weekly Progress Report.

6. Report the results of your model clash analysis in the Excel spreadsheet