**MILESTONE EVALUATION SHEET**

**MILESTONE NO.**

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| **DATE:11/6/2018** | **COURSE NO.: ISMG 6060** |
|  | **INSTRUCTOR: Ersin Dincelli** |

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| **TEAM NO. OR NAME** | **TEAM MEMBERS** |
|  | **Yash Nigam** |
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| **Student comments:** |
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| **Instructor comments:**   |  | | --- | | **Description on Improvement in Database Performance** | | It would be better to provide more details in describing how your strategy improve the database performance, such as access speed, update speed, and storage space. | | **Connectivity Description** | | Need to use class and communication diagrams to describe the connectivity among the classes on the problem domain, physical architecture, data management, and human computer interaction layers. See figure 9-22 on the textbook page 359 as an example of the class diagram. | |

**Score:9**

**Apply the rules of normalization to the class diagram** to check the diagram for processing efficiency.

**First normal form**

A table is said to be in 1NF, if there is no multivalued field in the table, with this diagram, there are no classes representing tables field with multi valued attributes, so they are all in first normal form

**Second normal form**

This table is in 2NF because, its already in 1NF and non-key attributes are dependent on the primary key, for instance two companies cannot have same names or contract numbers, so name is the primary key.

**Third normal form**

The table is in 1NF and 2NF as well the non-key attributes should not be dependent on any non-primary key, transitive dependency cannot be present. With the above diagram, no attributes of any tables are dependent on non-primary key.

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| Staffing Request |
| -StaffingRequest -Company Name  -Status  -Candidate Name |
| +Search suitable candidate  +Maintain staffing request database |

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| --- |
| Company |
| -Name -Detail  -Contract Number |
| +Sends Request () |

1 Associated with 1..\* 1..\*

1. 1

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| --- |
| Contract |
| -Number -Terms and condition  -Company Name |
| +Check Availability of staffing request  +Send valid staffing request to StaffingRequest |

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| --- |
| Candidate |
| -ID -Name  -Qualification  -Experience  -Request Status |
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**Develop a clustering and indexing strategy**

Clustering is one of the methods to improve the speed of accessing data from the relational database. In clustering, similar records are collected together physically so that similar records are together. With our tables for PSSM-DAM, Contract table, request table and staff table, it is easier to store data in these tables. Therefore, whenever a query is run to look for records, by their keys, types or any other attribute, the similar data can be pulled. With Interfile clustering, similar records/data is pulled from multiple sources/tables. With each table, there can be only clustering strategy, we will cluster data according to staff table, request table and PSSM table.

Index in a database is like an index in the book. It contains values from many columns in a table. With a query, indexing can be useful to find locations and details of records associated with the query, adding to it, a table can have unlimited number of indexes. In a decision support system, using many indexes can increase the response time. To perform join function, index keys can be created based on their foreign keys. With a large dataset, creating an index can be helpful for fields in grouping and sorting.

**Describe how your strategy will improve the performance of the database.**

With the introduction of tables at data management layer and various User interfaces like contract manager UI, Placement specialist UI and arrangement specialist UI, at the human computer interaction layer, the proposed system will enhance the hiring process at PSSM. The relational database requires an architectural design which is fulfilled by this system to database access and manipulation services. The basic function performed by the database are open, close, read, update, store, create and delete tables. These functions will be incorporated in staff database, request database and the contract database. With functions like real time updating will be supported by clustering and indexing resulting in a fast and efficient database system.



**Describe the connectivity among the classes on the problem domain and data management layers**



**Communication diagram**



**Connectivity between Human computer interaction layer, Problem domain layer and Data management layer**

