**BIRLA INSTITUTE OF TECHNOLOGY**

**& SCIENCE, PILANI**

**WORK INTEGRATED LEARNING PROGRAMMES**

**DATABASE DESIGN AND APPLICATIONS- ASSIGNMENT**

|  |  |  |  |
| --- | --- | --- | --- |
| **Version Number** | **Date** | **Author/Owner** | **Description of Change** |
| 1.1 | March 15 2017 | Akshaya Ganesan | First Release |
| 1.2 | July 20,2018 | Uma Maheswari | Second Release |

**Introduction:**

The candidates can choose a business application **(web based)** from a domain of their own interest, which would make use of a database management system. Over the semester, the candidates would

* Problem Statement,
* Design the ER or EER accordingly,
* Design the database schema,
* Implement the schema,
* Perform normalizations/modifications
* Populate and manipulate data (according to use cases),
* Verify transaction processing for the chosen business problem.

Towards the end of semester , each group would present the design of their system and a working demo of the implementation.

|  |  |  |  |
| --- | --- | --- | --- |
| **S.NO** | **Activity Description** | | **Deliverables** |
|  | **PROBLEM STATEMENT** | |  |
| 1. | 1. Choose the problem/application in a domain of their interest and justify why database approach is required | | Provide the details:   1. Choice of application and domain 2. Justification of the requirement of database approach for the problem |
|  | **CONCEPTUAL DESIGN** | |  |
| 2 | 1.  2. | List down:   1. Enlist the users of the system 2. Functionality and features of the system 3. Identify entities   Provide the EER or ER model for the system | Provide the details:   1. Users, functionality, features of the system 2. ER model of the system |
|  |  | **LOGICAL DESIGN** |  |
| 3 | 1. | Convert EER model to database schema | Provide the database schema |
|  |  | **PHYSICAL DESIGN/ IMPLEMENTATION** |  |
| 4 | 1. | Implement the database schema and integrity constraints | Soft-copy /snapshot/Demo of the implementation |
| 5 | 1.  2. | Populate sufficient amount of data in to the tables – insert, updates etc.  Perform basic retrieval queries (Questions will be provided in basic English by instructor) | Soft-copy/snapshot/demo of the data  insert/update/retrieval sqls well commented |
| 6 | 1. | Refine the table design based on functional dependencies and 3NF concepts | (a) Provide details of schema refinement (b) Soft copy details /screen shots of changes made |
| 7 | 1.  2. | Use views/joins and complex queries to achieve different tasks – as required  Use transactions to achieve the different functionalities of your system – as required | 1. Provide details of the views/joins and their correspondence with   the tasks   1. Soft-copy of the statements, transactions etc. as used. |
| 8 | 1. | Create Stored procedures/ Triggers applicable for your |  |
|  | 2. | scenario  Create front-end and implement database connectivity from programming languages | 1. Implementation (softcopy) submissions made so far 2. Demo of the application |

**Instructions :**

1. Carefully choose a business application since it is a continuous process of 8 activities.
2. The course instructor will brief you on the each activity in the respective contact session related to the activity.
3. Each group will be give two presentations, first presentation before the midsem exam and second presentation before compre Exam.
4. The first presentation will cover all the deliverables upto activity no: 5, Second presentation on completion of all the activities.
5. Please refer to the sample document for documentation. The same documentation can be used for presentation. Soft copy of the documentation is sufficient.
6. Maintain proper version control for documentation. Include the below table in from page of your document for monitoring changes. Record minor changes as well.

|  |  |  |  |
| --- | --- | --- | --- |
| **Version Number** | **Date** | **Author/Owner** | **Description of Change** |
|  |  |  |  |

1. Any relational DBMS software can be used.
2. In case of doubts at any activity, contact the course instructor for clarification. Do not wait till the presentation.