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| Faculty of Engineering & Technology | | | |
| Ramaiah University of Applied Sciences | | | |
| Department | Computer Science and Engineering | Programme | B. Tech. Computer Science and Engineering |
| Semester/Batch | 5th/2018 | | |
| Course Code | 19CSC302A | Course Title | Database Systems |
| Course Leader(s) | A. Prabhakar, Gp Capt N Rath VSM, Ami Rai E. | | |

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| Assignment - 01 | | | | | | | | |
| Register No. | | |  | Name of Student | |  | | |
| Sections |  | **Marking Scheme** | | | Max Marks | | First Examiner Marks | Second Examiner Marks |
| Part A | A.1 | Merits and demerits of relational and graph databases | | | 02 | |  |  |
| A.2 | Justification of the stance taken and conclusion | | | 03 | |  |  |
|  | **Part-A Max Marks** | | | **05** | |  |  |
| Part B1 | B1.1 | List of functional and data requirements | | | 03 | |  |  |
| B1.2 | Discussion on the entities, attributes, and relationships | | | 02 | |  |  |
| B1.3 | ER diagram | | | 02 | |  |  |
| B1.4 | Identification of any requirement that is not possible to model using ER diagram | | | 03 | |  |  |
|  | **B1 Max Marks** | | | **10** | |  |  |
| Part B2 | B2.1 | Design of database schema | | | 03 | |  |  |
| B2.2 | Discussion on the constraints | | | 02 | |  |  |
| B2.3 | Implementation using SQL commands | | | 02 | |  |  |
| B2.4 | Update operations violating the schema constraints | | | 03 | |  |  |
|  | **B2 Max Marks** | | | **10** | |  |  |
|  | **Total Assignment Marks** | | | | **25** | |  |  |

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| **Course Marks Tabulation** | | | | |
| **Component- 1(B)Assignment** | **First Examiner** | **Remarks** | **Second Examiner** | **Remarks** |
| A |  |  |  |  |
| **Marks (out of 10)** |  |  |  |  |
| Signature of First ExaminerSignature of Second Examiner | | | | |

**Please note:**

1. Documental evidence for all the components/parts of the assessment such as the reports, photographs, laboratory exam / tool tests are required to be attached to the assignment report in a proper order.
2. The First Examiner is required to mark the comments in RED ink and the Second Examiner’s comments should be in GREEN ink.
3. The marks for all the questions of the assignment have to be written only in the **Component – CET B: Assignment** table.
4. If the variation between the marks awarded by the first examiner and the second examiner lies within +/- 3 marks, then the marks allotted by the first examiner is considered to be final. If the variation is more than +/- 3 marks then both the examiners should resolve the issue in consultation with the Chairman BoE.

**Assignment - 01**

**Instructions to students:**

1. The assignment consists of **3**questions: Part A –**1** Question, Part B- **2**Questions.
2. Maximum marks is **25**.
3. The assignment has to be neatly word processed as per the prescribed format.
4. **Submission Date:** 28/11/2020
5. **Submission after the due date is not permitted.**
6. **IMPORTANT**: It is essential that all the sources used in preparation of the assignment must be suitably referenced in the text.
7. Marks will be awarded only to the sections and subsections clearly indicated as per the problem statement/exercise/question

**PART A 5 Marks**

Databases are used everywhere, including the areas such as health, education, and businesses. The relational database is a collective set of multiple data sets organized by tables, records and columns. The relational database has been used for a long time in industry and academia. However, due to enormous growth in the use of social media, new requirements have emerged. Graph database uses graph structures to represent and store data. In graph database, each node represents an entity and edge represents a relationship between the entities.

In this context, develop a debate on the topic: ***“Can*** ***graph databases replace relational database technologies”.***

The report should address the following:

A.1 Merits and demerits of relational and graph databases

A.2 Justification of the stance taken and conclusion

**PART B 20 Marks**

**B1 10 Marks**

Consider an **Online Furniture Shopping System**. A user should register with the system by providing necessary details, such as Name, Address and Phone number and create a login ID and password. The user can search for furniture matching his/her interest. The system checks the availability of furniture for the category searched by the user and displays the information such as product ID, name, price, colour, and material. The user can then select from the list of options and add the product to the cart or purchase directly. The system is periodically updated on the arrival of new furniture and indicates automatically when a furniture is out of stock.

The report should address the following:

**B1.1** List of functional and data requirements

**B1.2** Discussion on the entities, attributes, and relationships

**B1.3** Modelling of ER diagram  
**B1.4** Identification of any requirements that is not able to capture in the ER

diagram and justify the way to solve it using other conceptual data models

**Note:** Make appropriate assumptions to make the specification complete.

**B2. 10Marks** Consider the ER diagram that you had designed for the system given in B1. Translate the ER diagram into a relational schema and implement using SQL commands.

The report should address the following:

**B2.1** Design of database schema

**B2.2** Discussion on the schema-based constraints applicable for the developed schema

**B2.3** Implementation of relational database schema with appropriate attributes, and constraints using SQL commands

**B2.4** Show how the update operations violate the schema-based constraints by executing SQL commands

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