**Vishal Maru**

**Assignment 1**

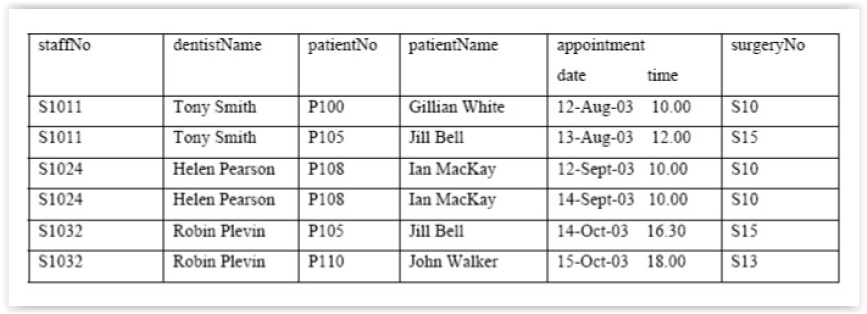
**IT 340**

**Due Date: Feb. 15, 2018**

1. What role does the ER diagram (ERD) play in the database design process? Why is it important? (10 points)

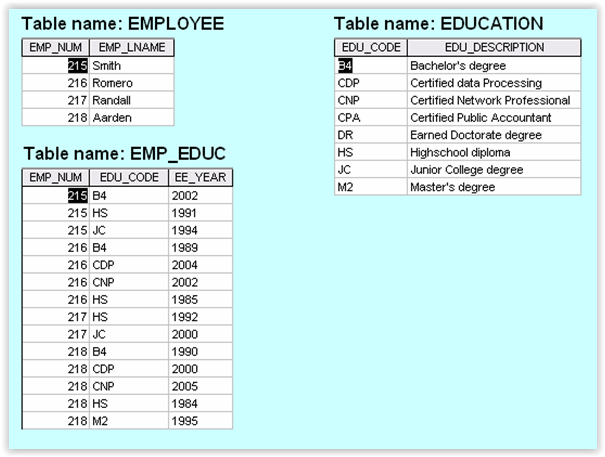
* ERD represents the conceptual database as viewed by the end user.
* ERD’s depict the database’s main components: entities, attributes, and relationships.
* It is necessary to provide easier understanding of the database and the business rules.

1. The following report provides information about patients, appointments, and dentists in a dental clinic. Provide examples of insert, update, and delete anomalies in the following report. (10 points)



* Insert anomaly: Patient Name cannot be entered without appointment date and time.
* Update anomaly: (Jill Bell) Surgery number is same (15) even though it is the second time and with different dentists.
* Delete Anomaly: Deleting any of the information about any dentists, if they leave, can delete the information about the patients and the surgeries.

1. A company wants to track education and professional certifications for their employees in a relational database. Create an ERD (Crows Foot notation) that can help track this information. The following image can provide you information about the tables and the data stored in them. Write the business rules for this database as necessary. (40 points)



* Relationships

1. Employee (EMPLOYEE) is related to (EMP\_EDUC) Education data.
2. Education data (EMP\_EDUC) is related to Education Degrees & Courses (EDUCATION).

* Business Rules

1. An Employee must have an Education Degree/Professional Certificate.
2. An Education Degree/Professional Certificate may or may not be assigned to an employee.
3. Create an Access database that reflects your ERD. The Access database should have the tables and attributes as shown above. You should create appropriate relationships between the tables. It is not required to add the actual data to the tables. (40 points)