

FACULTY OF SCIENCE AND TECHNOLOGY

COURSEWORK FOR
BSC (HONS) IN COMPUTER SCIENCE
BSC (HONS) INFORMATION SYSTEMS
BSC (HONS) INFORMATION TECHNOLOGY
BACHELOR OF SOFTWARE ENGINEERING (HONS)
BSC (HONS) INFORMATION SYSTEMS (BUSINESS ANALYTICS)
BIS (HONS) IN MOBILE COMPUTING WITH ENTREPRENEURSHIP
BSC (HONS) INFORMATION TECHNOLOGY (COMPUTER NETWORKING AND SECURITY)

YEAR 1

ACADEMIC SESSION 2019; SEMESTER 1, 2

SEG1201: DATABASE FUNDAMENTALS

DEADLINE: 9 May 2019

STUDENT NAMES: _____
STUDENT IDS: _____

- This assignment contributes 15% to your final grade.
- This is a group assignment (group of maximum *five* students)

IMPORTANT

The University requires students to adhere to submission deadlines for any form of assessment. Penalties are applied in relation to unauthorized late submission of work.

- Coursework submitted after the deadline but within 1 week will be accepted for a maximum mark of 40%.
- Work handed in following the extension of 1 week after the original deadline will be regarded as a non-submission and marked zero.

Lecturer's Remark (Use additional sheet if required)

I..... (Name)std. ID received the assignment and read the
 comments..... (Signature/date)

Academic Honesty Acknowledgement

"We verify that this paper contains entirely our own work. We have not consulted with any outside person or materials other than what was specified (an interviewee, for example) in the assignment or the syllabus requirements. Further, we have not copied or inadvertently copied ideas, sentences, or paragraphs from another student. We realize the penalties (*refer to page 16, 5.5, Appendix 2, page 44 of the student handbook diploma and undergraduate programme*) for any kind of copying or collaboration on any assignment."

..... (Student signatures / Date)

Instructions:

1. Please download ***hospital_db.txt*** script from [eLearn \(folder COURSEWORK\)](#) to create and populate TimTam database.
2. The assignment submission must be in hardcopy and to be submitted to the DCIS/Admin department. Your answers must in the form of a screenshot that consists of both the SQL query and the resultant table. Ensure that the background of the screenshots is in white.
3. Each part of your assignment should be clearly labelled to identify the question that is being answered.
4. Queries should be written so that they would work with all reasonable sets of test data, not just that which has been supplied (do not, for example, assume that there are only two surgeons).
5. When a question asks for information related to a particular person or an operation type, a hospital ward or whatever by name, your SELECT statement should contain that name. **Do not look up** the corresponding PERSON_ID, etc and use that result in your answer.

For example, if the question asks to display Buddy Smith's date of birth, your query should be as follows:

```
SELECT birth_date
FROM person
WHERE surname = 'Smith' AND first_name='Buddy';
```

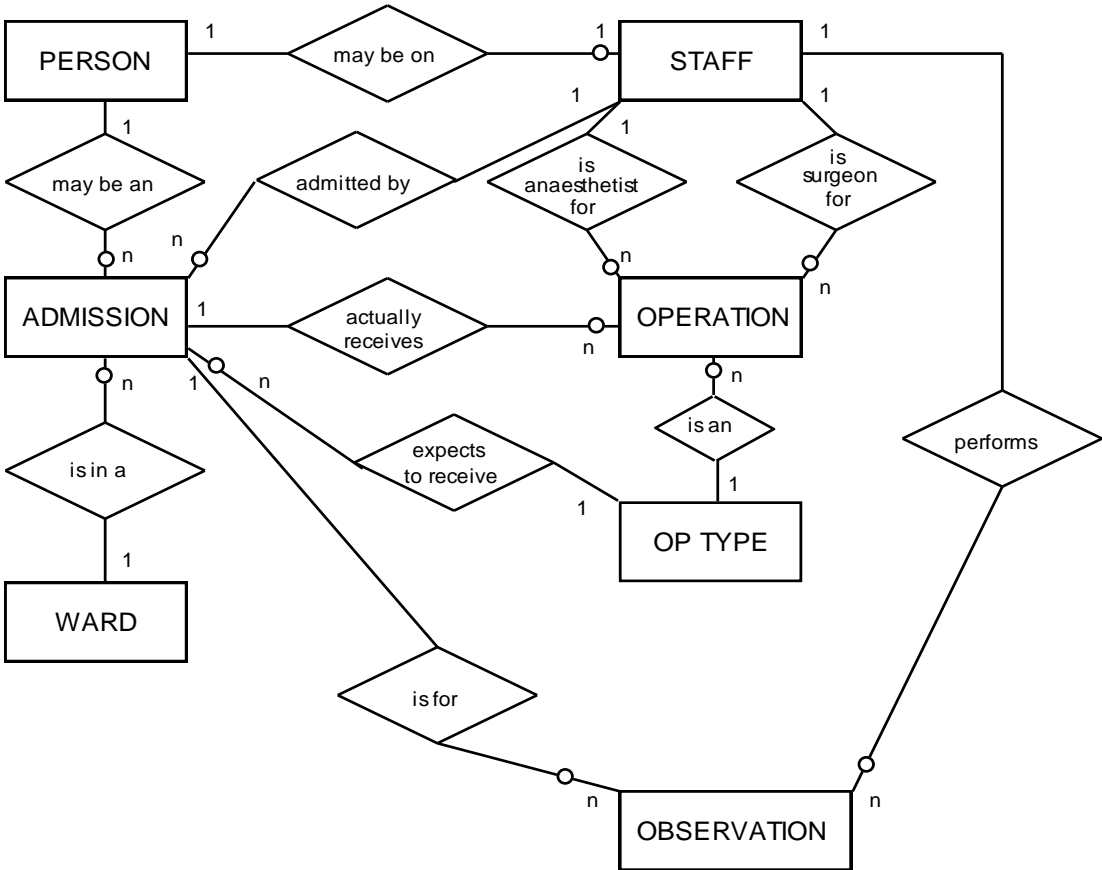
and **not** the following, even it produces the same result.

```
SELECT birth_date
FROM person
WHERE person_id = '124';
```

6. Marks may be deducted if your SQL is excessively complicated.

Case study

TimTam Hospital stores the data of its patients and staff. The following Entity Relationship diagram illustrates the structure of the database.



Prior to answering the following questions, ensure that you have set the page and line sizes accordingly to avoid breaks or wrap around in your results. Marks will be deducted for NOT displaying the results in a presentable format. To re-iterate, ensure that the screenshots background is in white.

- 1
- Run **hospital_db** script. You may encounter some errors, which are intentional. Your group needs to fix this script before answering any of the following questions.
- (5 marks)
- a) List all the errors that you have fixed using the following template:

No	Error	Solution
1		
2		

3		

- b) Explain how **ADMISSION** table can be enhanced to ensure data consistency and integrity.
- c) Name the corrected script as ***hospital_db_FIXED***.txt and upload it to eLearn.

2 List the id of all inhabitants, who are not *TimTam* Hospital staff. Note: you are required to use a set operator. (3 marks)

3 List all the wards that have never been painted. (3 marks)

4 List the total number of inhabitants for each town and order the report with the highest number of inhabitants first. The report should have the following heading: (3 marks)

Town Name **Total Number of Inhabitants**

5 List the person id, first name, surname, age and postcode for people who live in either *Henty*, *Temoro* or *Young* and who are at least 20 years of age. The result must be sorted in descending order based on age, which is an integer. (5 marks)

6 List all the towns and their inhabitants' first name and surname, whose birthday month falls in *August*. (3 marks)

7 List all the medical records from year 2015 to current:- the patient full name, observation date, observation type and observation value for temperatures between 38.5 and 39.5, as well as any pulse readings between 70.5 and 75.5. Order the report from lowest to highest observation values. (10 marks)

8 List all the people who live at *The Esplanade*. Sort the result so that youngest inhabitants appear first. (5 marks)

9 List the ward code, the maximum stay and the average length of stay for each ward. List only wards with average stay greater than 20 days (10 marks)

Assume that if a patient were admitted one day, and discharged the next, they would have stayed for two days).

- 10 Show the total number of inhabitants for each town. Sort them by town in ascending order. (3 marks)
- 11 List all the hospital staff who stay in *Cooma*. (5 marks)
- 12 For each type of operation, list the operation type, operation name, and average number of days that the patients stay in the hospital. The list is to be sorted in alphabetical order on operation name. (10 marks)
- 12 List the number of patients, who have been operated on and are **currently** recuperating in the wards. The report must have the following heading: (10 marks)

<u>Ward Name</u>	<u>No of Patients</u>
-------------------------	------------------------------
- 13 For each patient who has had the same observation performed more than once on the same day, list their first_name and surname, together with the observ_type, the date the observation was performed and the number of times it was performed. The list needs to show the observations performed most frequently first. (10 marks)
- 14 List all the types of operations performed since 2014. (5 marks)
- 15 List the details of all discharged patients who did not undergo any operation(s). Hint: you may like to use a set operator. (10 marks)