**Comments for TMA01 Semester OCT 2003, by Andy Au (t420135), Group 4**

This document is aimed at providing readers a guideline for addressing the key points of each question in TMA01, whereas the most common errors made by colleague.

Q1.

a) i)

Simply describe the steps: specify criteria -> input Shine(Cons), Anglia (Ward) -> apply criteria -> Next to browse until the last patient. A few students did not point out Ward Name is not shown in Consultant-Patient name

a) ii)

Concerns Doctor's name and to highlight no uniqueness, then suggest additional staff number

a) iii)

We concern the context (meaning / semantics) of a piece of text. Structured data contains meaning to associate, e.g. "Jones" appears as Patient Name in Form is structural and means a patient named Jones.

b) i)

Surprisingly not much full mark is scored here. We need to identify that student s07, named Gillies, registered course C4 – Semantics, a credit rating of 60 points, and a tutor 3158, Jennings is assigned to this student and course, and Gillies has scored grade91 in the 1st assignment, that is.

b) ii)

Empty -> I) no value is assigned, e.g. S46 or value follow the one in immediate previous row, e.g. S05

b) iii)

Potentially ambiguous use of short label in some form, e.g. name for student name or tutor name?

c) i)

Design view of Observation Form -> SQL Select -> Where {common_name=mallard} -> Save -> Run

c) ii)

Focus on selection of data to display, columns of data (you select fields) and rows of data (you specify criteria like c) i) )

c) iii)

User view: the content and display of data projected form data in database to user; database view represents all data held.

Q2

i)

Some suggestions on updating data problem: invalid data, inconsistent data, violation of semantic constraints; some on changing data definition: simply loss of data e.g. remove a column; remember the 3 schema model? We made change to data definition -> logical, then possibly inconsistent with related storage and external

ii)

As application process - determine how data is displayed based on user needs; database tool user should know what data is kept in which table, thus how it is organized

iii)

Then more data than actually required is presented to user; and for large table it is ineffective

Q3.

i)

identifier must be unique -> no two same Birdname+Date, then how to record more than 1 observation in a day? Consider to introduce an extra attribute like Time to make it Birdname+Date+Time

ii)

1. ER diagram: IsSeenIn and IsWhere show Bird >----expect----< Location, many to many but broken down into 2 x 1:m relationships
2. Entity Definition: Bird only is not unique to identify an expectation, it is Bird+Location+Season, so you may find entries contain bird in different locations

iii)

Bird is optional → may be recorded in the database but not yet have been observed

Observation is mandatory → not possible to record an observation which does not observe a bird in the database

iv)

Introduce an extra entity Witness where

Witness >M-----Confirmedby-----O< Observation and

Witness ( Name, Address, Telephone); note many students add an identifier like WitnessID which is not stated in the requirement; rather we like to have assumption to take Name+Address as identifier

And we need an explanation of the degree and participation:

- Only rare birds observations need confirmation, so not all Observation participate, it is Optional
- Witness are only recorded if they confirm at least 1 observation – Mandatory
- Observations when confirmed, it has to be confirmed by at least two witness, hence Many
- Witness may confirm several observation – hence Many

Note: The m:n relationship does not need decomposition into 2 x 1:m relationships where no additional information about the relationship needed to be recorded