Sample Answers to Scenario Questions

The drug study is set to begin in just a few months’ time. It is important to make some progress toward the database. It is time to gather all the materials you have collected and try to make some sense of them.

1. **Make a list of issues with the current system.**

   In this scenario, there really isn’t a current system since they are setting up a database for a new study. The issues are really that the database must track a double blind test, in which no one can know which patient has been given which drug.

2. **Make a list of the database requirements for each stakeholder involved in the database.**

   For the Researchers the database must:
   - Track which patients are assigned which drug.
   - Track patient responses and symptoms.
   - Produce reports on patient results.
   - Allow them to enter and remove doctors and patients.

   For the Doctors the database must:
   - Allow them to track their own patients’ appointments.
   - Allow them to enter vitals and notes.
   - Allow them to review individual patient notes and medical history.
   - Allow them to schedule and cancel appointments.

   For the Patient the database must:
   - Accurately record their vitals and symptoms.
   - Allow them to make and cancel appointments.
   - Patients should be able to see their own medical history and doctor notes.

3. **Make a list of business rules.**

   - No one is to know which patient is on which drug
   - Only researchers can add or remove patients
   - Doctors can recommend that a patient be removed from the study
   - Doctors should be able to see and review only their own patient’s information
   - On occasion a patient can see another doctor, for that appointment the doctor can view that patient’s information
   - Patients can schedule and cancel appointments
   - Patients who miss too many appointments (set a number) can be removed
   - Doctors can cancel appointments
   - Each patient should be seen at least twice a month
4. **List some major security rules for the database.**

   There are several security issues with this database. First, no one should be able to
determine which patient is on which drug. To prevent this doctors, should see only their
own patients’ data. A patient should be able to see only their own information. Even
appointments should be private to the extent that a doctor or patient should only see
their own appointments.

   Further this kind of study has financial implications and could be the target of corporate
espionage, so it must be protected from unlawful entry.

5. **Take a look at each of the forms and make a list of all the nouns in them. Do the same
   for the interview, the questionnaire and the Job Shadow Report. Then set up some
   preliminary entities and attributes.**

   There are a lot of nouns in the forms for this scenario. Here are some of them:
   Name, Date, Birth Date, Address, City, State, Zip, Phone, Email, Group No.,
   Agreement No., Prescriptions, Non-prescriptions, Allergies, Long Disorder, High
   Blood Pressure, Heart Trouble, Blood Pressure, Pulse, Weight, Depression,
   Symptoms, Recommendation, etc.

   The initial entities would probably be something like these:
   Patient (Name, Birth Date, Address, City, State, Zip, Phone, Email)
   Patient History (Group No., Agreement No., Prescriptions, Allergies, etc)
   Appointment (Blood Pressure, Pulse, Weight, Depression, Symptoms, etc.)

6. **Identify some candidate keys.**

   The agreement number is a candidate key for medical history and maybe even for
   patient. For Appointment, some combination of the date, and a patient ID, (again
   possibly the agreement number might work.)

**General Guidelines for this Assignment**

The **Wild Wood** scenario has a great deal of data to work with. The issues, as defined in the
earlier chapters are fairly clear. The requirements are also fairly detailed and easy to extract.
Several business rules are explicit or can be inferred. The forms contain nouns that can be
grouped into entities and attributes with some ease. Security is relatively simple.

**Vince’s Vinyl**, on the other hand, is vague in a lot of details. The requirements can be extracted
easily enough, but the business rules are vague and fluid. You will have to infer many of the
rules. In this scenario there are few forms, but the basic entities should be easy enough to
extract. Security is a minor issue, though if Vince starts keeping customer information that
should be protected.

The **Granfield College** scenario is fairly clear in its requirements, but a little vaguer on the
business rules. Some of these can be inferred from the Job Shadow Report. You may also
make reasonable assumptions about other rules and procedures. The entities should be
relatively clear. Security concerns are simple.
The **Westlake Hospital** scenario has a complex set of forms, and a great many nouns to collect. The basic entities should not be too hard to define. The requirements are also fairly clearly stated in previous chapters, as are many of the business rules. Security is more complex in this scenario than in any of the other scenarios because of the double blind testing requirements. Patients and doctors should only be able to see certain information.

The following rubric for this unit assignment should also guide you on the level of detail and the content expected. Contact your instructor if you have questions.

<table>
<thead>
<tr>
<th>Poor</th>
<th>Ok</th>
<th>Good</th>
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<tbody>
<tr>
<td>1. Shows no signs of reviewing the issues raised in the previous chapters</td>
<td>Lists the issues that were described in the initial description of the scenario</td>
<td>Lists not only the issues found in the initial description of the scenario, but includes issues that arise from discussion of job shadows and reviews of the forms</td>
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<td>2. General list of a few requirements, not grouped by stakeholder. Requirements list may show confusion as to what is a requirement</td>
<td>Requirements grouped by stakeholder. List of requirements adequate, if not complete. Most listed requirements show an understanding of what requirements are</td>
<td>A comprehensive list of well-defined requirements grouped by stakeholder</td>
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<td>3. A weak list of business rules. Some confusion about what a business rule entails</td>
<td>A list of basic business rules that shows comprehension of what a business rule is</td>
<td>A comprehensive list of valid business rules</td>
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<td>4. Little sense of the security issues involved</td>
<td>Fair sense of the security issues listed in general terms</td>
<td>Good sense of security issues, with specific rules and concerns</td>
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<td>5. Some nouns listed. No real sense of what would constitute an entity vs. an attribute</td>
<td>Good list of nouns. Identifies the major entities and a reasonable grouping of attributes under those entities</td>
<td>Complete or nearly complete list of nouns. Clear identification of entities vs. attributes. May infer additional entities and attributes</td>
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<td>6. Little to no sense of what makes a key. Candidate keys have no uniqueness</td>
<td>Decent selections for candidate keys. Keys may not be unique, but shows an attempt to find an attribute that could be unique</td>
<td>Candidate keys all are unique. May involve combinations of attributes, or the addition of new attributes</td>
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