**Criterion B: Analysis**

**Proposed Solution:**

My client and I initially considered the following solutions:

1. Creating a spreadsheet with all the nutrient and symptoms information
2. Creating a database
3. Making an online book that contains all the information in a pdf form

We concluded that a database would be the best option for the client’s needs.

**Requirement Specification**

IT System Requirement

* Hardware: PC with minimum requirements (1 GHz processor, 512 MB RAM, 10GB HD, Screen, Keyboard, Mouse); Min 1 GB flash drive for backup
* Software: Windows XP or greater, MS Access 2003 or greater

System Interaction

* Microsoft Access requirements, 500-megahertz (MHz) processor or higher, 256 megabytes (MB) of RAM or higher, 2 gigabyte (GB) available disk space, 1024×768 or higher resolution monitor.

**Input/Output Requirements**

Input Requirements

The following inputs will be given by the user

* MinVit ID
* Symptom ID
* Deficiency ID
* For the ‘Edit MinVit form’, the MinVit name, its details, where it is present in, its deficiency symptoms and overdoes details

Output Requirements

The following reports should be given as output

* List of Deficiencies
* List of Symptoms
* List of Nutrients
* Specific Nutrient information
* Specific Symptom information
* Specific Nutrient information

Processing

1. Multiple Queries
2. Forms
3. Multiple Reports
4. Macros

Security: The client said that she does not require any form of security on her database. It should be open to use.

Backup: The client has been instructed on how she can manually back up her data on a weekly basis.

**Specific Performance Criteria**

1. To measure the effectiveness of the database
   1. An interface that is user friendly and easily understandable by the client
   2. Easy to input data
   3. Gives clear and relevant reports as output
   4. Easy to search for relevant data
2. The database should have these functionalities
   1. When prompted to show the list of nutrients, opens the report that contains a list of vitamins and minerals along with their respective IDs
   2. When the viewer presses the button “Search using MinVit ID”, the database closes the previous report and open a dialogue box asking for input in form of MinVit ID
   3. When the ID has been input by the user, the database opens a report that contains all stored information about that nutrient.
   4. When prompted to “search by symptom”, the database should open a list of complete symptoms along with their IDs and when the user presses “search for symptom information”, a dialogue box opens which asks the user for the symptom ID.
   5. When the ID has been input by the user, the database opens a report that contains all stored information about that symptom.
   6. When prompted to search by deficiency, the database should open the report that contains a list of nutrients along with their respective IDs
   7. When the viewer presses the button “Search by deficiency ID”, the database should close the previous report and open a dialogue box asking for input in form of Deficiency ID
   8. When the ID has been input by the user, the database opens a report that contains the name of that deficiency and all its stored symptoms.
   9. When prompted to “edit MinVit info”, the database should open a form in which the user can edit each nutrient record.
   10. When prompted to “search via multiple symptoms”, the database should open a list of symptoms along with a dialogue box that asks the user for up to three symptom IDs. When the user inputs the IDs, the database should be able to compare which deficiency has all those symptoms and open a report that contains the name of that deficiency.
   11. The database should be able to successfully print each report when prompted
   12. The database should be able to move to the previous form/report when prompted to go ‘back’
   13. When prompted to ‘exit program’, the database should close.

**Justification of chosen solution**

The biggest problems or inadequacies of the system through which Dr.Asma currently gets data were time, reliability of found data, and access to the internet or reading sources. The type of solution she wanted was one in which these inadequacies were eliminated or, at the very least, reduced. A system that’s saves the time and effort needed to search for answers, one that can produce results based on the input (which in this case, are the symptoms), within seconds.

A database would be ideal for this solution. A database that has the necessary information present in its repository can quickly cross check the deficiencies with symptoms and give an immediate list of nutrients that patient might be deficient in along with other necessary information. Aside from this, a database requires minimal space in any information system’s storage and does not require internet access to use. As Dr. Asma frequently carries her laptop and smartphone around, she can easily have this database saved into her laptop or smartphone. This will make it readily available to her for instant use.

Other solutions were either making a MS excel spreadsheet that contained the necessary information on just a single sheet, or making an android application with the same functions as this database. The problems with the spreadsheet is that while all the necessary information will be accumulated in one sheet, it would still be too time consuming for the client as she would still have to go through all the records to find symptoms and cross check those with the relevant nutrient deficiencies. There will also be a lot of data redundancy when using a spreadsheet. For the android application, I personally do not have the competency or expertise to make a functional android application from scratch.

Both my computer and the client’s computer system met the IT system and the system interaction requirements. The database itself will be very user friendly but I will provide the client a tutorial on how she can use it and the different features integrated in it nonetheless.

**Words: 345**