**Criterion B: Analysis**

**Proposed solution:**

**The solution we have thought of choosing are**

1. Web-based application
2. Mobile application
3. Offline database application

The IT product we have chosen for this solution is the offline database application which will be a desktop-based application. This IT solution suits the best according to the situation of the problem.

## **Requirement specification**

**IT system requirements**

* **Hardware- Desktop computer or Laptop with minimum 1 GB RAM, 32 GB Hard Disk, and 1 gigahertz processor.**
* **Software- Windows 10 OS, Microsoft Access 2016, Visual basic.net, visual basic 6, Direct X 11.**

**System Interaction**

* **The database application will Only function when Microsoft Access has been installed in the Operating System.**
* **To function the database application without malfunction, Microsoft services and applications should work properly without any errors.**

**Input / Output Requirements**

* **Input requirements**
* The gym logo
* Any frequent use of colors or images you would like to have
* Any specific style which you want me to follow while developing the application
* Information about the tables where the information is stored. (how many tables do you use for maintaining the data such as a table for members, equipment, their dates)
* Information that is being stored in the table (Information like phone number, Activation date. Detailed field names in which the data is stored)
* Information about the relationship between tables. (information like where specifically the data is repeated like the consumer name when they are buying something)
* Information about calculations performed (date calculation or subscription calculation)
* Information about different types of subscriptions you offer (Like subscription A for a year and b for 6 months)
* Sample data for tables

**Output requirements**

* Displaying gym logo on the Main-Menu of the application
* Using colors and images in Interface Like background color, buttons color.
* The style for designing the layout of the application like tabular, column, Portrait and landscape.
* The tables and their data field will be used for creating the functionality of the application like for displaying forms fields, creating reports.
* Relationships will allow using that field in the table to use in the foreign table like when the in the customer table the name field is stored using relationship it can be used in diet which will allow the user to select from existing customers in the dropdown.
* To make an application make automatic calculations like calculation of dates Bmi and Ideal weight.
* Sample data for testing the application like to test that it is giving desired results or not. Application is fitting with the data.

**Processing requirements**

* Clicking on the buttons to open the forms
* Giving input values to get the automatic calculations
* Clicking on buttons to delete, add and search the data
* Clicking on buttons to view reports

**Security**

* **The application is offline so the security will be higher as there will be a connection with the internet. There are very few chances of getting data breaches.**
* **There will be a recovery option in the application when the data is deleted it will not get deleted immediately but it will be permanently deleted in 10 days. This will prevent data loss.**

**Specific performance Criteria**

* Interactive Graphical user interface with navigation buttons.
* Interactive forms for different tables
* Automatic calculations of dates basis on given input on forms for gym equipment and subscription.
* Display report of Expired subscription. and Pending Maintenance.
* The backend is inaccessible to prevent malfunctioning in the application.
* Different buttons to perform tasks such as Deleting, adding, and searching.
* Realtime Calculator of BMI and Ideal weight with parameter input.
* Display a particular person’s progress report with a Graphical chart.
* Extra forms and reports to increase application flexibility
* Report of BMI and Ideal weight of Existing customer.

**Justification of chosen solution**

The client requirement is clearly specified that it needs to organize the data to make the work easier for the client. This requirement can be fulfilled by a data manipulation tool that can calculate the data, make relationships between tables and can store the data in the database which can be done by Microsoft Access 2016. The other solutions such as a web application and mobile application do not suit the client requirement. There is no such need of accessing the data remotely and having enormous people to access it which removes the web application from the list as a solution. Mobile applications can be really portable but there's not such a specific requirement. The offline database solution can be very feasible according to the client requirements. A database application can store large amounts of data efficiently. The data can be added and deleted. From the data, the reports and calculations can be done. The database application will minimize data inconsistency, give faster access to desired data, and mainly increase end-user productivity. The hardware and software specifications required to use the database application are fairly compatible with the client's device. Developing Microsoft access applications is possible to create in the available time. Microsoft database applications are flexible and adaptable. The resources for developing skills to create Microsoft access applications are widely available, which makes me learn the skills faster because of the variety and it will allow me to develop all the functionality of the database application. The distribution and implementation of the product can be done with ease, it's just going to need the Microsoft Access application. The application will be able to solve the main problem of my client which needs to display the pending maintenance and expired subscription which can be done by the database application. There is not a large amount of training required to use this application. The application will be user-friendly and self-explanatory.