**Chapter 8b - Review Questions**

1. **List and describe various types of output, including technology-based forms of information delivery.**

* Most output in a business information system is still provided in the form of on-screen displays and printed matter such as detail reports, summary reports and exception reports. With the increased availability of new technologies available today, companies are finding new ways to provide output to their employees. Some of the newer methods being used are webcasts, e-mail, blogs, instant messaging, data transmitted to a wireless device such as a palm pilot, digital audio/video and images sent to users, podcasts, faxback, computer output to microfilm (COM), computer output to digital media (such as DVDs or CDs), and other specialized forms of output (web-connected devices, retail point-of-sale devices, ATMs, special-purpose printers, plotters, and electronic detection of data imbedded into credit cards/driver’s licenses, etc.).

1. **Explain each of the data validation rules mentioned in this chapter.**

* Each of the data validation rules are:
  1. **Sequence Check** – Used when data must be in some predetermined sequence such as numerical order or chronologically by date.
  2. **Existence Check** – Used for mandatory data items. An example of this would be if a social security number is required for the record.
  3. **Data Type Check** – Used to ensure that an item fits the required data type such as alphabetical. The input would have to be characters A-Z or a-z or an error message would appear.
  4. **Range Check** – Used to ensure that the data falls between a specified minimum or maximum value. If the check involves only a minimum value or a maximum value it is called a limit check.
  5. **Reasonableness Check** – Identifies values that are questionable, but not necessarily wrong. This might be used for example when a payroll system sees a high number of hours worked in one day (20 hours). Even though the number falls between the acceptable values of 1 and 24, it seems unusual and the system should verify it.
  6. **Validity Check** – Used for data items that must have certain values. Checking the customer number against the customer number stored in their customer file would be an example of this. This particular example would be called a referential integrity check.
  7. **Combination Check** – Performed on two or more fields to ensure that they are consistent or reasonable when considered together. An example of this would be if a customer ordered 50 books from a company and the order is listed with a 20% discount that is only available on purchases of 100 books or more.
  8. **Batch Controls** – Totals used to verify batch input. For example checking the total number of orders and the value of the orders. The user might calculate these numbers ahead of time and once the batch of orders is entered, the system calculates the same totals. If the numbers don’t match, an order-entry error has occurred. Unlike the other validation checks, batch controls do not identify specific errors.

1. **What are the main principles of source document design?**

* Source documents should be designed in a way that makes them easy to complete and use for data entry. The layout of the form should be well designed so that the form is easy to complete, has enough space provided (both horizontally and vertically) for users to enter data and should indicate data entry positions clearly through the use of blank lines or boxes with descriptive captions. Source documents usually include different zones in their design. The Heading Zone usually contains the company name or logo as well as the title and number of the form. The Control Zone contains codes, identification information, numbers and dates used for storing completed forms. The Instruction Zone contains instructions for completing the form. The Body Zone, which is the main part of the form, usually takes up at least half of the space on the form and contains captions and areas for entering variable data. The Totals Zone is where totals appear if they are included in the form. Finally the Authorization Zone contains any required signatures. Information should flow on a form from left to right and top to bottom to match the way users read documents naturally.

1. **Explain batch and online input methods. Define source data automation and provide an example.**

* Batch, online input method and source data automation are:
  1. **Batch Input Method** – Using this method, data entry is usually performed on a specified time schedule, such as daily, weekly, monthly, or longer. An example would be if a payroll department collects all of the timecards at the end of a week and enters them as a batch.
  2. **Online Input Method** – Uses online data entry. This method has major advantages such as immediate validation and availability of data. If source data automation is not used, manual data entry is slower and more expensive than batch input because it is performed at the time the transaction occurs and often done when system demands are at their highest.
  3. **Source Data Automation** – Source Data Automation combines online data entry and automated data capture using input devices such as RFID tags or magnetic data strips. This method is fast and accurate, and minimizes human involvement in the translation process. An example of this might be a retail store that uses a portable bar code scanner to receive new shipments and update inventory data.

1. **Provide four guidelines for reducing input volume.**

* The four guidelines for reducing input volume are:
  1. Input necessary data only. Don’t input data unless it is required by the system.(For example, if the form being used includes the sales person’s name, but the system doesn’t ask for it)
  2. Do not input data that the user can retrieve from system files or calculate from other data. (For example, if the system pulls the customer data and fills the information in based on your input of the customer ID)
  3. Do not input constant data. (For example, if the orders are in batches with the same date, you should only input the date once for the first order in the batch)
  4. Use codes. Codes are shorter than the data they represent, and coded input can reduce data entry times.

**Chapter 8b - Personal Trainer, INC**

1. **Suggest context-sensitive and specific Help for the switchboard and lower-level menus and forms. Prepare storyboards that show the proposed screens. Also suggest at least six types of data validation rules for data entry screens.**

* For the main screen of the switchboard, I would recommend that a brief explanation of what each button does pops up when the user hovers over the button with their mouse. This should also happen when they hover over a button on any level of the menus. Context specific help should be available on the different forms throughout. For example, when entering any data in the fields that ask for member number, instructor number or class number, help should be provided in a separate popup box that explains how many digits a member/instructor ID needs to be and how many digits in a class number. There should also be a list available of existing client/instructor/class numbers for the user to choose from. Whenever a user is finalizing data (deleting a record, adding a record), the system should ask if they are sure they wish to proceed. Keys should be present on each menu to allow the user to undo changes they’ve made.
* The six types of data validation rules for data entry screens are:

1. Information entered into the Member ID/Instructor ID should be checked to verify the user input numbers instead of letters. (**Data type**)
2. Member/Instructor name should be checked to verify that only alphabetic characters were used. (**Data type**)
3. Member/Instructor ID should be checked to verify that it is an ID assigned to a current member/instructor. (**Existence check**)
4. As new members/instructors are added, the system should ensure that they are being assigned the next available ID number. (**Sequence check**)
5. As a member registers for a class, the system should check to make sure that the class is not full. (**Range check**)
6. When the member signs up for a class, the system should check that the member ID that they input matches the information saved in the system. (**Validity check**)
7. **Design a mail-in source document that members can use to register for fitness classes. Also design a Web-based registration form.**
   * See attached mail-in source document.

**Chapter 8b - Case in Point 8.3: LAZY EDDIE**

The first thing that Jan needs to do is to decide what exactly needs to be on the form. The form should be easy to complete and have enough space horizontally and vertically for users to enter the required information. She needs to ensure that all data entry positions are clearly indicated and that there are descriptive captions explaining what is to go in each area. She should construct the form using the different zones. All information should flow from left to right and top to bottom to make it easier for the users to follow.

That being said, I would make sure that the users understand why we were having them complete the form, what the results would mean to the company, the users and any other individual that will be affected by any changes in procedures that come out of this process.