Unit 2

Historical Perspectives and Applications of Data Processing

Manual Data processing

- Manual data processing refers to data processing. Requires humans to manage and process the data throughout its existence. Manual data processing utilizes non-technological tools. Although widespread use of the term data processing dates only from the nineteen-fifties, data processing functions have been performed manually for millennia. For example bookkeeping involves functions such as posting transactions and producing reports like the balance sheet and the cash flow statement. Completely manual methods were augmented by the application of mechanical or electronic calculators. A person whose job it was to perform calculations manually or using a calculator was called a "computer."

Automatic Data processing

- Automatic Data Processing is the creation and implementation of technology. Technology includes computers and other communicationsThe term automatic data processing was applied to operations performed by means of unit record equipment, such as Herman Hollerith's application of punched card equipment for the 1890 United States Census. "Using Hollerith's punch card equipment, the Census Office was able to complete tabulating most of the 1890 census data in 2 to 3 years, compared with 7 to 8 years for the 1880 census. ... It is also estimated that using Herman Hollerith's system saved some $5 million in processing costs"[5] (in 1890 dollars) even with twice as many questions as in 1880.

Electronic Data processing

- . Electronic Data Processing (EDP) can refer to the use of automated methods. It is process commercial data. Also called Computerized data processing.
- It represents the further evolution, with the computer taking the place of several independent pieces of equipment.

Applications

- Commercial Data processing: Commercial data processing involves a large volume of input data, relatively few computational operations, and a large volume of output. For example, an insurance company needs to keep records on tens or hundreds of thousands of policies, print and mail bills, and receive and post payments.

Data analysis

- In a science or engineering field, the terms data processing and information systems are considered too broad, and the more specialized term data analysis is typically used. Data analysis makes use of specialized and highly accurate algorithms and statistical calculations that are less often observed in the typical general business environment.
- In data processing, measurements are typically stored as integers, fixed-point or binary-coded decimal representations of numbers, whereas the majority of measurements in data analysis are stored as floating-point representations of rational numbers. For data analysis, packages like SPSS or SAS, or other data analysis tools are often used.

STEPS TO DATA PROCESSING

- Data is an integral part of all business processes. It is the invisible backbone that supports all the operations and activities within a business. Without access to relevant data, businesses would get completely paralyzed. This is because quality data helps formulate effective business strategies and fruitful business decisions. Therefore, the quality of data should be maintained in good condition in order to facilitate smooth business proceedings. In order to enhance business proceedings, data should be made available in all possible forms in order to increase the accessibility of the same.

- Data processing refers to the process of converting data from one format to another. It transforms plain data into valuable information and information into data. Clients can supply data in a variety of forms, be it .xls sheets, audio devices, or plain printed material. Data processing services take the raw data and process it accordingly to produce sensible information. The various applications of data processing can convert raw data into useful information that can be used further for business processes.

- Companies and organizations across the world make use of data processing services in order to facilitate their market research interests. Data consists of facts and figures, based on which important conclusions can be drawn. When companies and organizations have access to useful information, they can utilize it for strategizing powerful business moves that would eventually increase the company revenue and decrease the costs, thus expanding the profit margins. Data processing ensures that the data is presented in a clean and systematic manner and is easy to understand and be used for further purposes. Here are the 5 steps that are included in data processing:

1. **Editing:** There is a big difference between data and useful data. While there are huge volumes of data available on the internet, useful data has to be extracted from the huge volumes of the same. Extracting relevant data is one of the core procedures of data processing. When data has been accumulated from various sources, it is edited in order to discard the inappropriate data and retain relevant data.
2. **Coding:** Even after the editing process, the available data is not in any specific order. To make it more sensible and usable for further use, it needs to be aligned into a particular system. The method of coding ensures just that and arranges data in a comprehensible format. The process is also known as *netting* or *bucketing*.
3. **Data Entry:** After the data has been properly arranged and coded, it is entered into the software that performs the eventual cross tabulation. Data entry professionals do the task efficiently.

4. **Validation:** After the cleansing phase, comes the validation process. Data validation refers to the process of thoroughly checking the collected data to ensure optimal quality levels. All the accumulated data is double checked in order to ensure that it contains no inconsistencies and is utterly relevant.

5. Tabulation: This is the final step in data processing. The final product i.e. the data is tabulated and arranged in a systematic format so that it can be further analyzed. All these processes make up the complete data processing activity which ensures the said data is available for access.