

## Data

- Raw **unorganized facts** or simple descriptions
- Ex. postal code, street name or number, etc.

## Data Types

- **Alphanumeric** – numbers, letters, digits, other characters
- **Image** – graphic images, pictures, charts
- **Audio** – sounds, tones
- **Video** – moving images

## Information

- Collection of data organized in a **meaningful** way
- Ex. mailing address

## Knowledge

- **Understanding** of information and ways to make the information **useful** for a task

## Quality of Information

- accurate
- simple
- secure
- flexible
- reliable

## Information System (IS)

- Collects, processes stores, analyses & distributes information for a specific purpose
- Ex. York Enrolment System

## Computer-Based Information System

- Set of interrelated components together **processing data** to provide **useful information** (feedback mechanism)

## Enterprise Resources Planning (ERP)

- Form of integrated systems; supports planning management resources and their use

## Five Forces Model

- Rivalry among competition
- Threat of new entrants
- Threat of substitute products/services
- Bargaining power of customers
- Bargaining power of suppliers

## Software Significance

- Allows computers to **implement** data processing

## Computer Program

- Sequence of **instructions** for computer

## Programming

- Process of **writing** programs

## Stored Program Concept

- Programs are **stored** in **computer's memory**

## Documentation

- Written **description** of program **functions**

## Registers

- **Store** very **small** amounts of **data** and instructions for **short** periods of time

## Arithmetic-Logic Unit (ALU)

- Performs instructions from **instruction set** (data movement, arithmetic operations, etc.)

## Primary Storage (Main Memory)

- Stores data, instructions, and operation system programs during program **execution**

## Secondary Storage

- Stores very **large amount of data** for **extended** periods of time

## Machine Language

- Composed of **binary** digits

## Assembly Language

- **Lower-level** but more **user-friendly** – **assembler** translates assembly language into **machine** language

## Procedural Languages

- Closer to **natural** language (common words rather than abbreviated mnemonics)

## Nonprocedural Languages

- High level language, allow user to specify desired result **without detailed procedures** (can be used by **non technical** users)

## Database

- **Organized** collection of data

## Database Management System (DBMS)

- Group of programs that **manipulate** the database
- Provide an **interface** between the **database** and its **users** and **other application** programs

## Database administrator (DBA)

- Skilled IS professional who **directs all activities** related to an **organization's database**

## Hierarchy of Data

- **Bit (binary digit)** - Circuit that is either on or off
- **Byte** - Typically made up of 8 bits
- **Character** - Basic building block of information
- **Field** – (combo of) characters that describe an aspect of a business object of activity
- **Record** – Collection of related data fields
- **Tables** – Collection of related records
- **Database** – Collection of integrated and related files

## Schema

- Used to describe the **entire database** (Can be part of the database or a separate schema file)

### **Data definition language (DDL)**

- Collection of instructions and commands used to **define** and **describe data** and **relationships** in a **specific database**
- Allows database's creator to describe data and relationships that are to be contained in the **schema**

### **Data dictionary**

- Detailed **description of all the data used** in the database

### **Semantic Web**

- Developing a **seamless integration of traditional databases** with the **Internet**

### **Data warehouse**

- Database that holds **business information from many sources** in the enterprise
- Relational database management systems specifically designed to support **management decision making**

### **Data mart**

- Subset of a **data warehouse**

### **Data mining**

- Information-analysis tool that involves the **automated discovery of patterns and relationships** in a data warehouse

### **Online Analytical Processing (OLAP)**

- Software that allows users to **explore data** from **different perspectives**

### **Business intelligence**

- Process of getting enough of the **right information** in a **timely manner** and **usable** form