Mansoura University Faculty of Computers and Information Department of Information System First Semester- 2024-2025

[IS312P] System Analysis and logical design

Grade: 3th IS

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Lec1: System Analysis Introduction to system Analysis and Design

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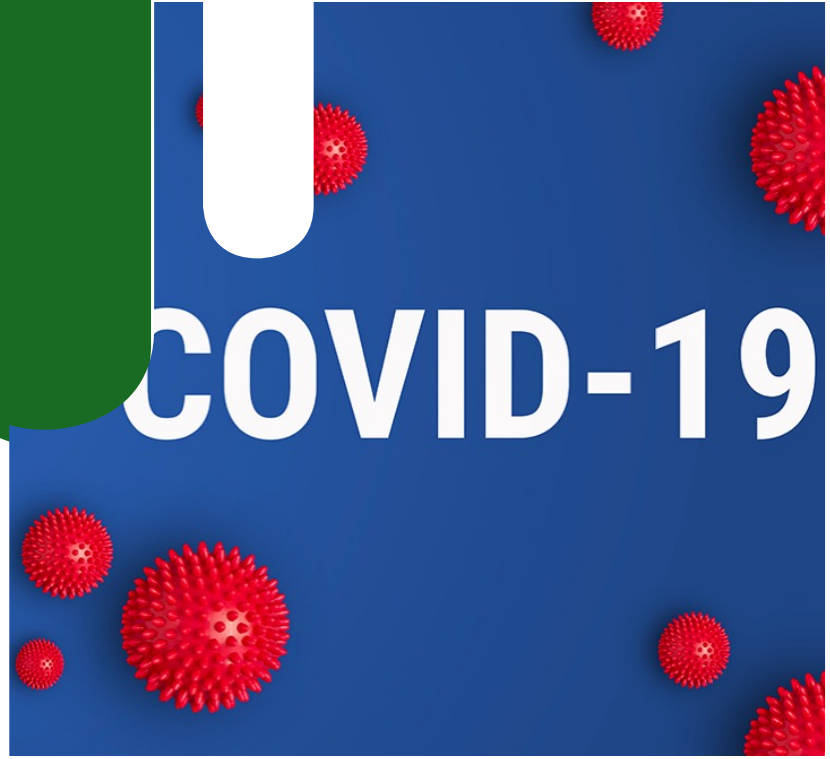
System Planning Phase

“If you don’t know where you are going, it doesn’t matter which way you go” Lewis Carol

- the planning is to think about alternatives of solutions.
- which one can be cheap or implemented in effective timely manner or the more viable and achieve the good quality measure.



moodle

A Battle with a hero IT vs Covid-19

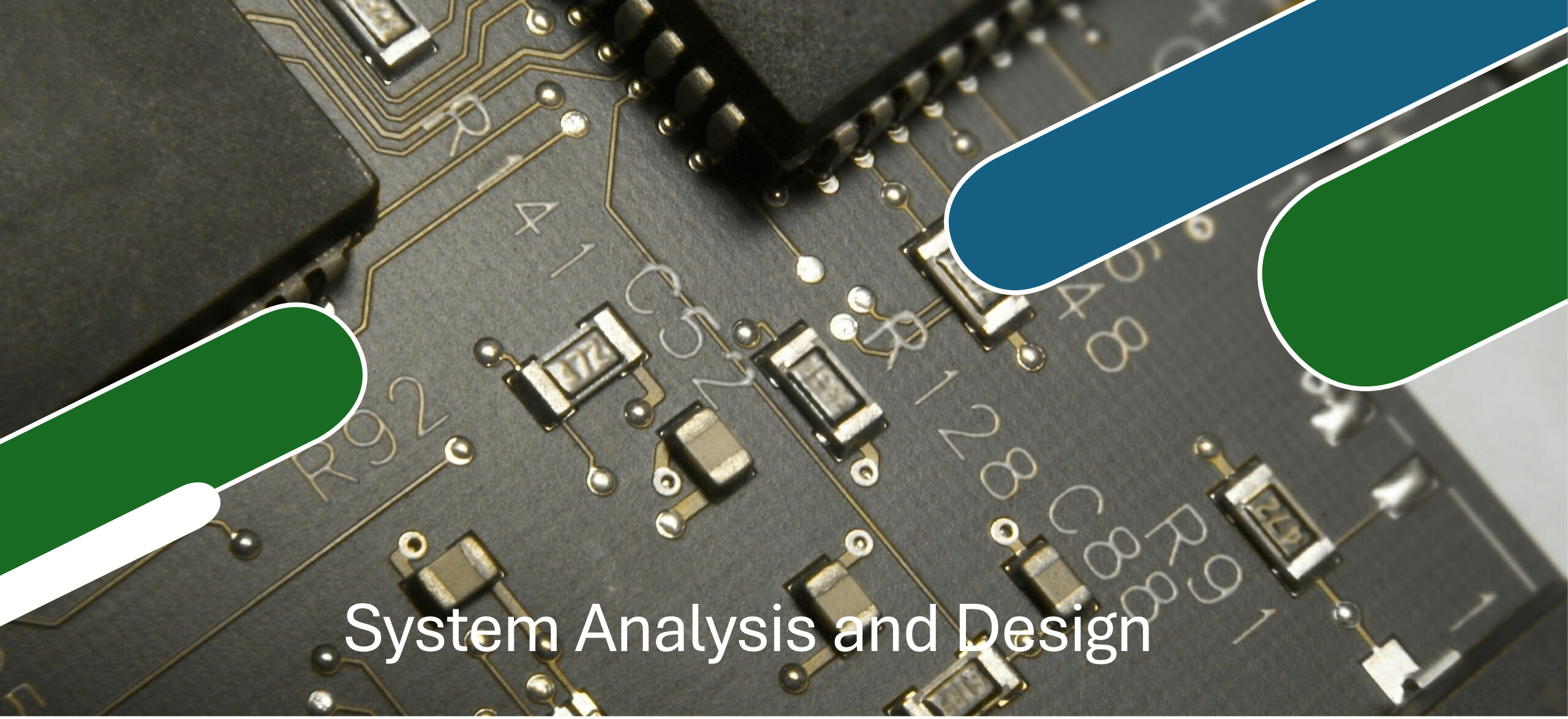
IT now is like a source of life like water and air.

- Digital transformation is not now for entertainment.
- Everything needed to be digitized, everything from home.
- Information technology can mean the difference between success and failure.

WHAT IS INFORMATION TECHNOLOGY?

Information Technology (IT) refers to the use of computers, networks, storage, and other physical devices, infrastructure, and processes to create, process, store, secure, and exchange all forms of electronic data. IT is essential in various industries for managing and processing information, supporting decision-making, automating processes, and improving communication.

- **IT encompasses areas like:**
- **Hardware:** Physical devices such as computers, servers, and networking equipment.
- **Software:** Programs and applications that run on computers and manage tasks.
- **Networks:** Systems that connect different computers and devices to share data.
- **Data Management:** Storing, retrieving, and analyzing data to support operations.
- **Cybersecurity:** Protecting data, networks, and systems from cyber threats.



System Analysis and Design

Systems analysis and design is a step by step process for developing high quality information systems

What Versus How

System Analysis is a process of collecting and interpreting facts, identifying the problems, and decomposition of a system into its component.

Asking for What.

Systems Design is a process of planning a new business system or replacing an existing system by defining its components or modules to satisfy the specific requirements.

Asking For How.

Who is Superman?

A systems analyst is a valued member of the IT department team who helps plan, develop, and maintain information systems.

- Analysts must be excellent communicators with strong analytical and critical thinking skills.

INFORMATION SYSTEM COMPONENTS

- **Information systems (IS) consist of several components that work together to collect, process, store, and disseminate information. These components are essential for the effective functioning of an IS and include both technical and human elements. The key components of an information system are:**

- **1. Hardware**
- The physical devices used in the system, such as computers, servers, storage devices, and networking equipment.

- **2. Software**
- The programs and applications that run on the hardware and direct its operation. Software can be divided into:
  - **System software**: Operating systems like Windows, Linux, and macOS that manage hardware resources.
  - **Application software**: Programs that perform specific tasks for users, such as word processors, database management systems, and web browsers.

INFORMATION SYSTEM COMPONENTS Cont.

- **3. Data**
- The raw facts and figures that are processed into meaningful information. Data can be stored in databases and manipulated by software to produce reports, analytics, or other insights critical for decision-making.

- **4. People**
- The users who interact with the information system. This includes:
    - **End users**.
    - **IT professionals**.

- **5. Processes**
- The procedures and rules that govern how data is collected, processed, and distributed.

Business Today

- "Business Today" is a popular name for business-related publications or platforms, often providing news, analysis, and insights on various aspects of the economy, finance, industries, markets, and technology. It typically covers topics such as:
  - **Business news**: Updates on companies, industries, and markets.
  - **Economic insights**: Analysis of global and local economic trends.
  - **Leadership and entrepreneurship**: Stories and interviews with business leaders and entrepreneurs.
  - **Technology and innovation**: The latest advancements in technology that impact businesses.
  - **Stock market updates**: News on market trends and investment opportunities

The Biggest 2 Internet Sectors

- The two biggest sectors of the internet, in terms of revenue, user engagement, and economic impact, are:
- **1. E-Commerce**
  - E-commerce refers to buying and selling goods or services online. This sector has grown exponentially due to the widespread use of the internet and mobile devices, offering consumers a convenient way to shop from anywhere in the world.
- **2. Digital Advertising**
  - Digital advertising includes all online marketing efforts, from display ads, social media ads, and search engine marketing (SEM), to video ads and influencer partnerships.

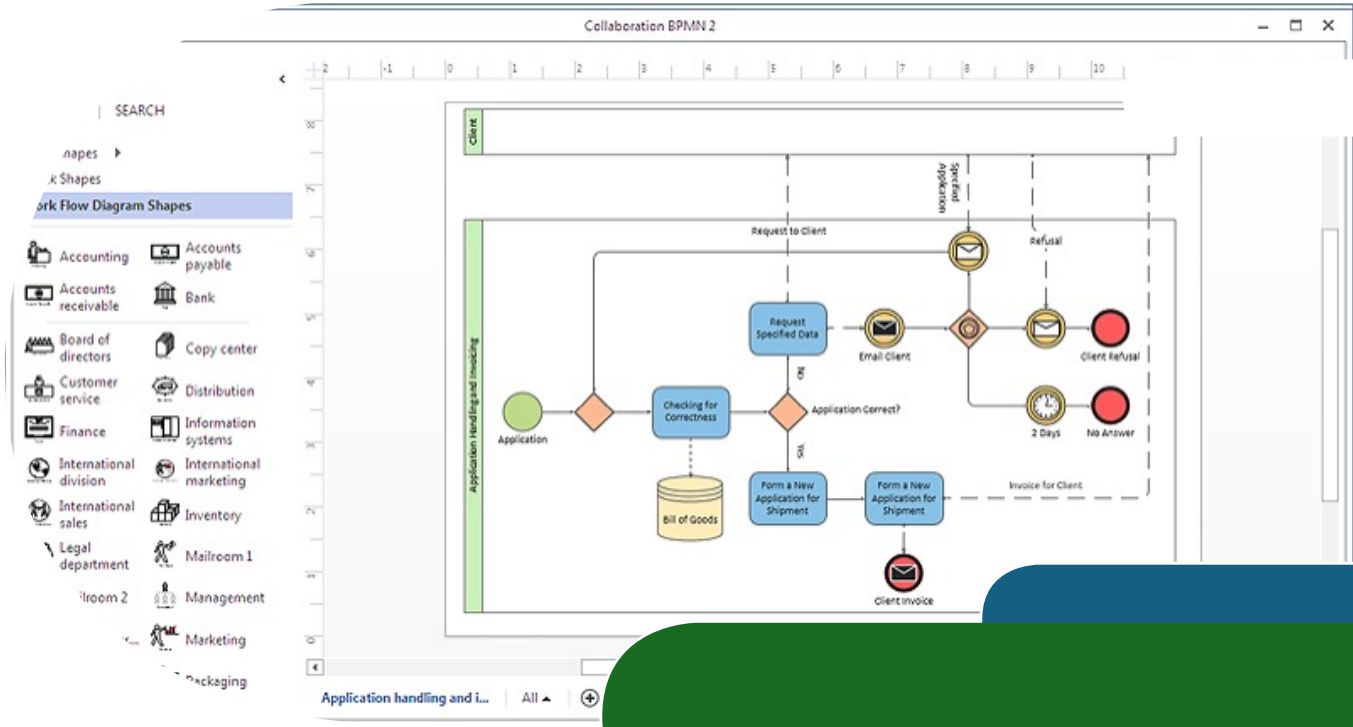
  - **Future Trends**: The growing use of **AI for targeted ads**, the rise of **programmatic advertising**, increasing importance of **video content**, and **privacy changes** (like the end of third-party cookies) are shaping the future of digital ads.

MODELING BUSINESS OPERATIONS

- A business profile is an overview of a company's mission, functions, organization, etc…

A business process is a specific set of transactions, events, and results that can be described and documented.

Business process modeling notation (BPMN) includes standard shapes and symbols to represent events, processes, workflows, and more.



Types of BUISNESS INFORMATION SYSTEMS

- **Transaction Processing Systems (TPS):**
  - Manage day-to-day transactions, such as order processing, payroll, and inventory control.
- **Management Information Systems (MIS):**
  - Provide managers with reports and summaries of data to help in decision-making. They typically focus on operational efficiency.
- **Decision Support Systems (DSS):**
  - Help in making complex decisions by analyzing large amounts of data and offering recommendations or insights.
- **Enterprise Resource Planning (ERP) Systems:**
  - Integrate all aspects of a business's operations into one comprehensive system, including finance, HR, supply chain, and production.
- **Customer Relationship Management (CRM) Systems:**
  - Focus on managing interactions with customers and streamlining sales, marketing, and customer support processes.

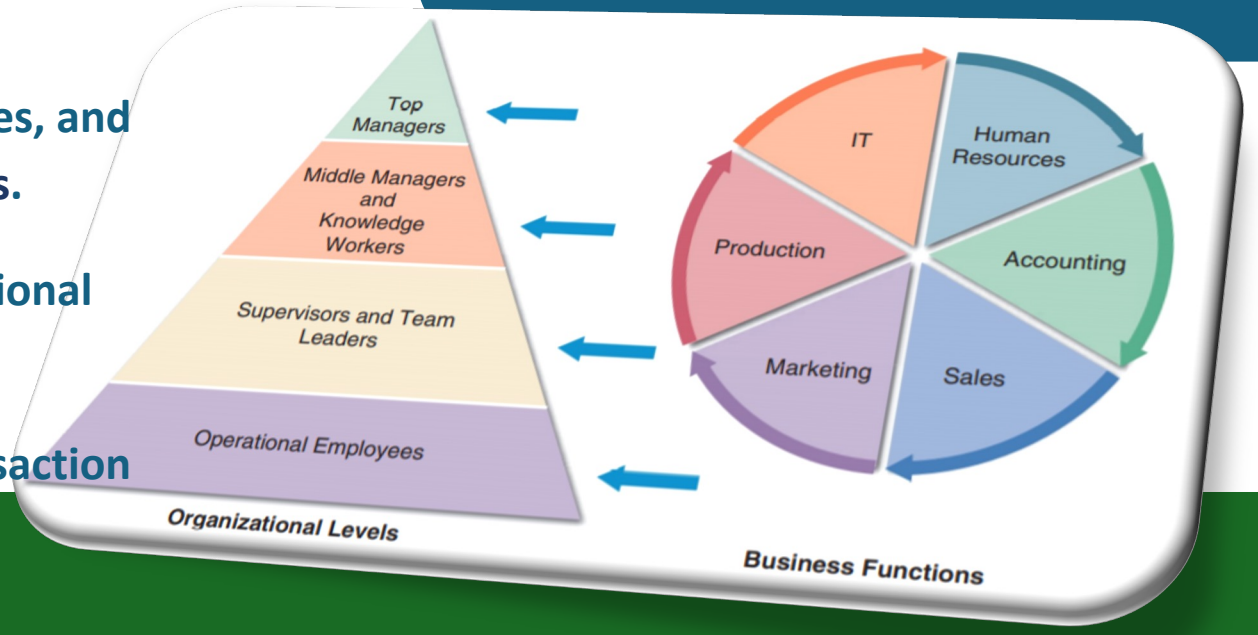
SUPPORTING THE ORGANIZATIONS WITH INFORMATION

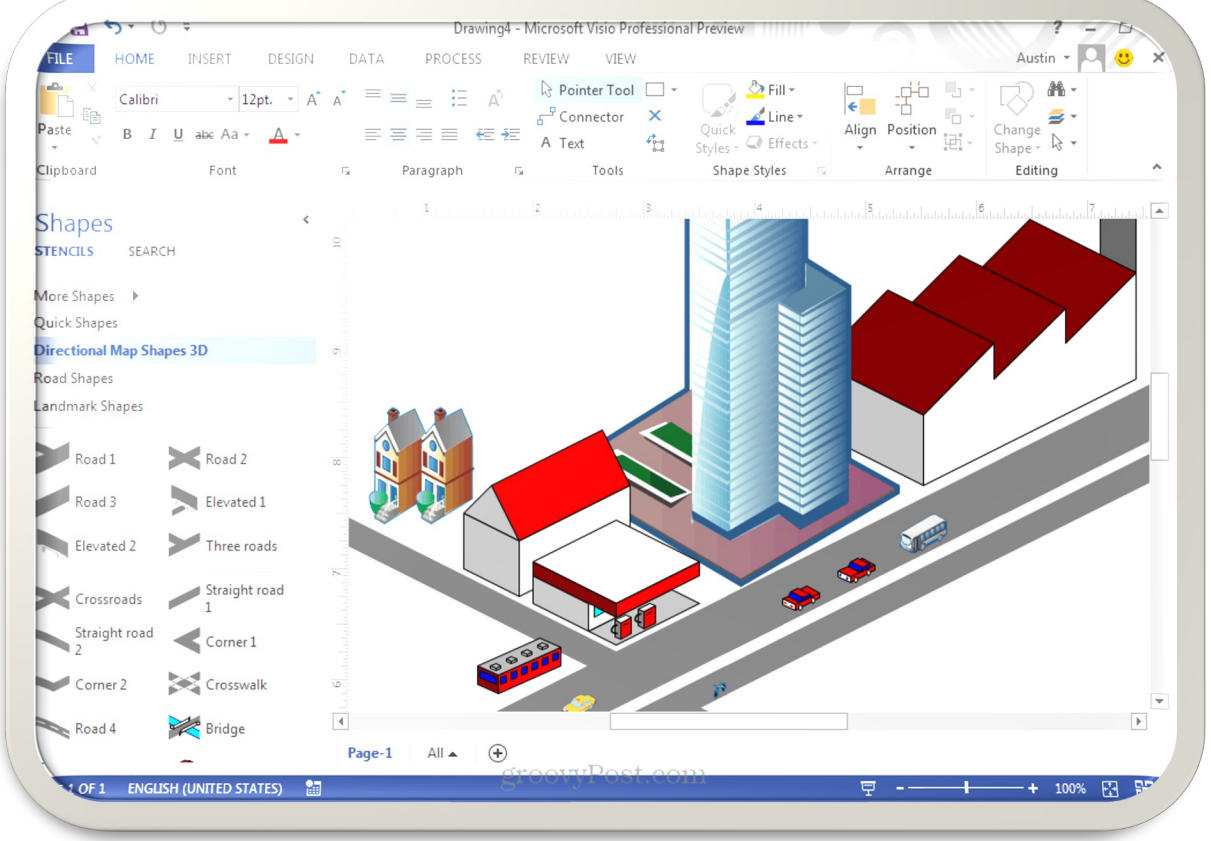
Top managers develop long-range plans, called strategic plans, which define the company's overall mission and goals.

Middle managers provide direction, necessary resources, and performance feedback to supervisors and team leaders.

Supervisors, often called team leaders, oversee operational employees and carry out day-to-day functions.

Operational employees include users who rely on transaction processing systems.





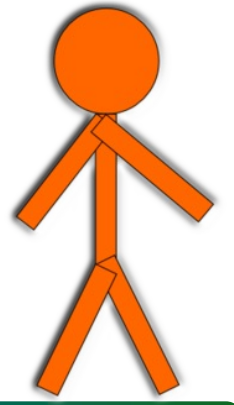
SYSTEMS DEVELOPMENT TOOLS

Modeling

Prototyping

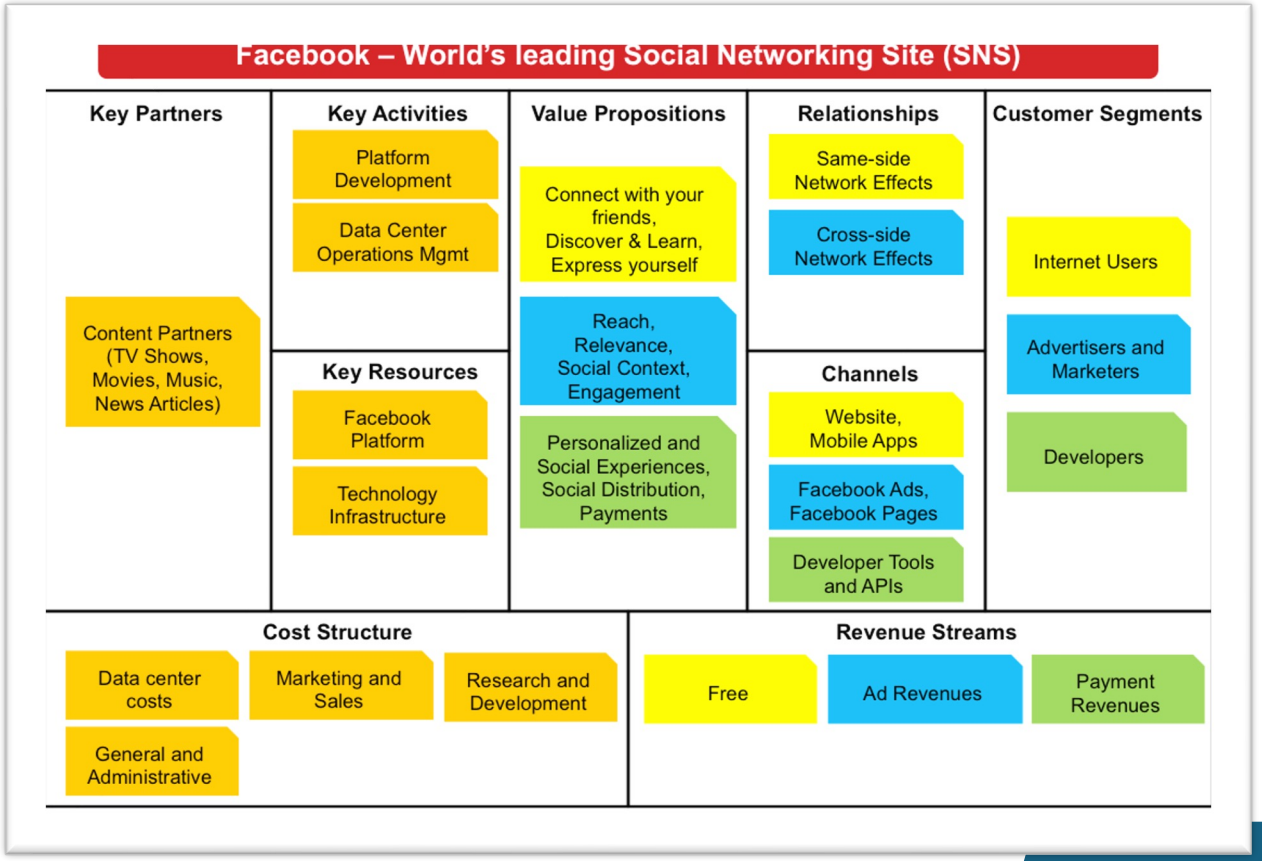
CASE Tools

Modeling



Modeling produces a graphical representation of a concept or process that systems developers can analyze, test, and modify.

- A **business model** describes the information that a system must provide and the value that provided to the customers in 9 blocks to show a brief information and viable to know the organization



Prototyping

Prototyping tests system concepts and provides an opportunity to examine input, output, and user interfaces before final decisions are made.

- A prototype is an early working version of an information system.
- prototyping speeds up the development process significantly.

COMPUTER-AIDED SYSTEMS ENGINEERING (CASE) TOOLS

Is a technique that uses powerful software, called CASE tool, to help systems analysts develop and maintain information systems.

- CASE tools provide an overall framework for systems development and support a wide variety of design methodologies.
- Biggest commercial tools like Visual Paradigm, Microsoft Visio.

THANK YOU!