

Introduction to Information Systems

Essentials for the Internetworked E-Business Enterprise

Eleventh Edition

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4

Chapter

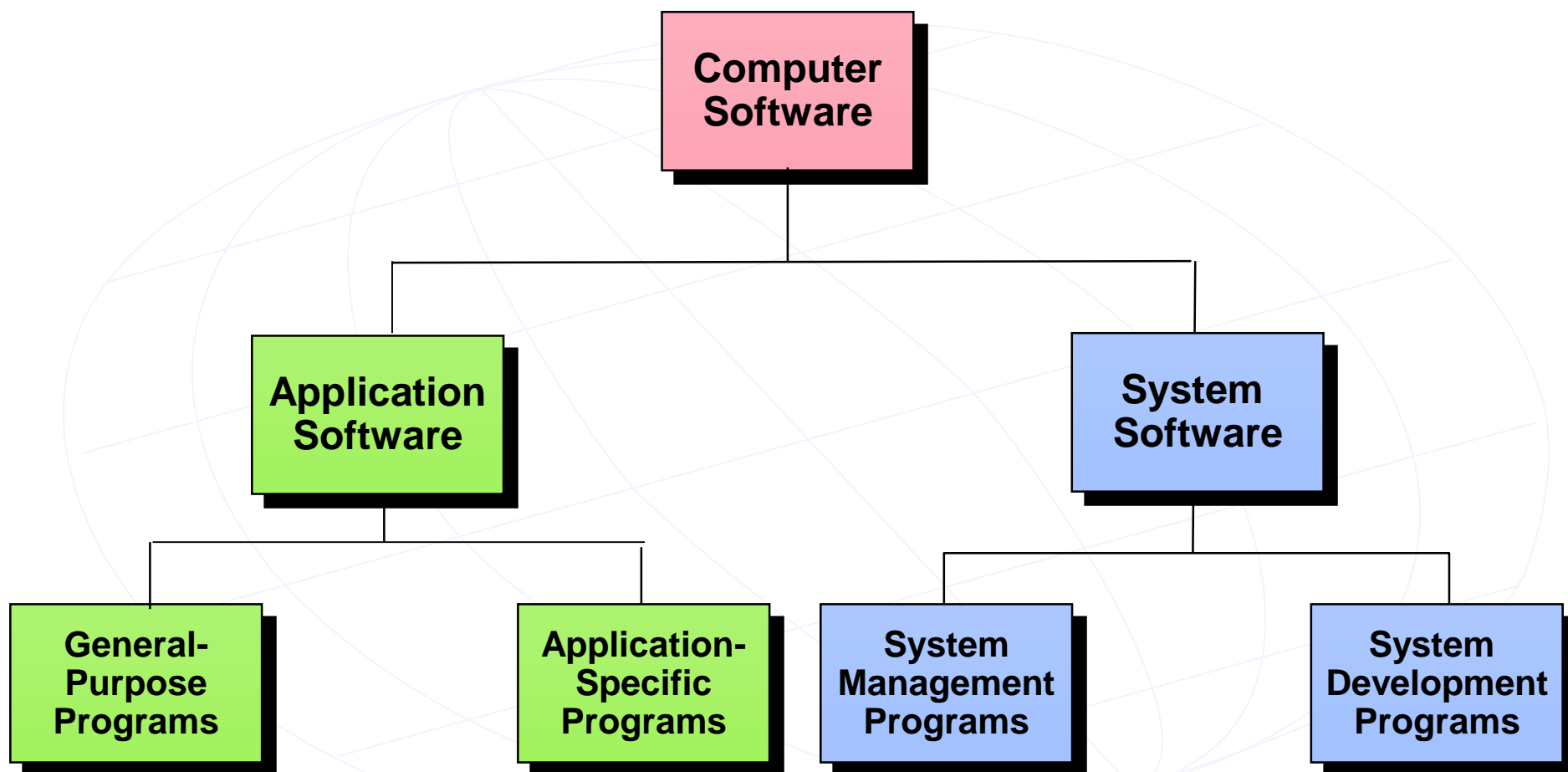
Computer

Software

Chapter Objectives

- **Describe several important trends occurring in computer software.**
- **Give examples of several major types of application and system software.**
- **Explain the purpose of several popular software packages for end user productivity and collaborative computing.**
- **Outline the functions of an operating system.**
- **Describe the main uses of high-level, fourth-generation, object-oriented, and Web-oriented programming languages and tools.**

Categories of Computer Software



Trends in Computer Software

First Generation	Second Generation	Third Generation	Fourth Generation	Fifth Generation
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***Trend:* Toward Easy-to-Use Multipurpose Network-Enabled Application Packages for Productivity and Collaboration**

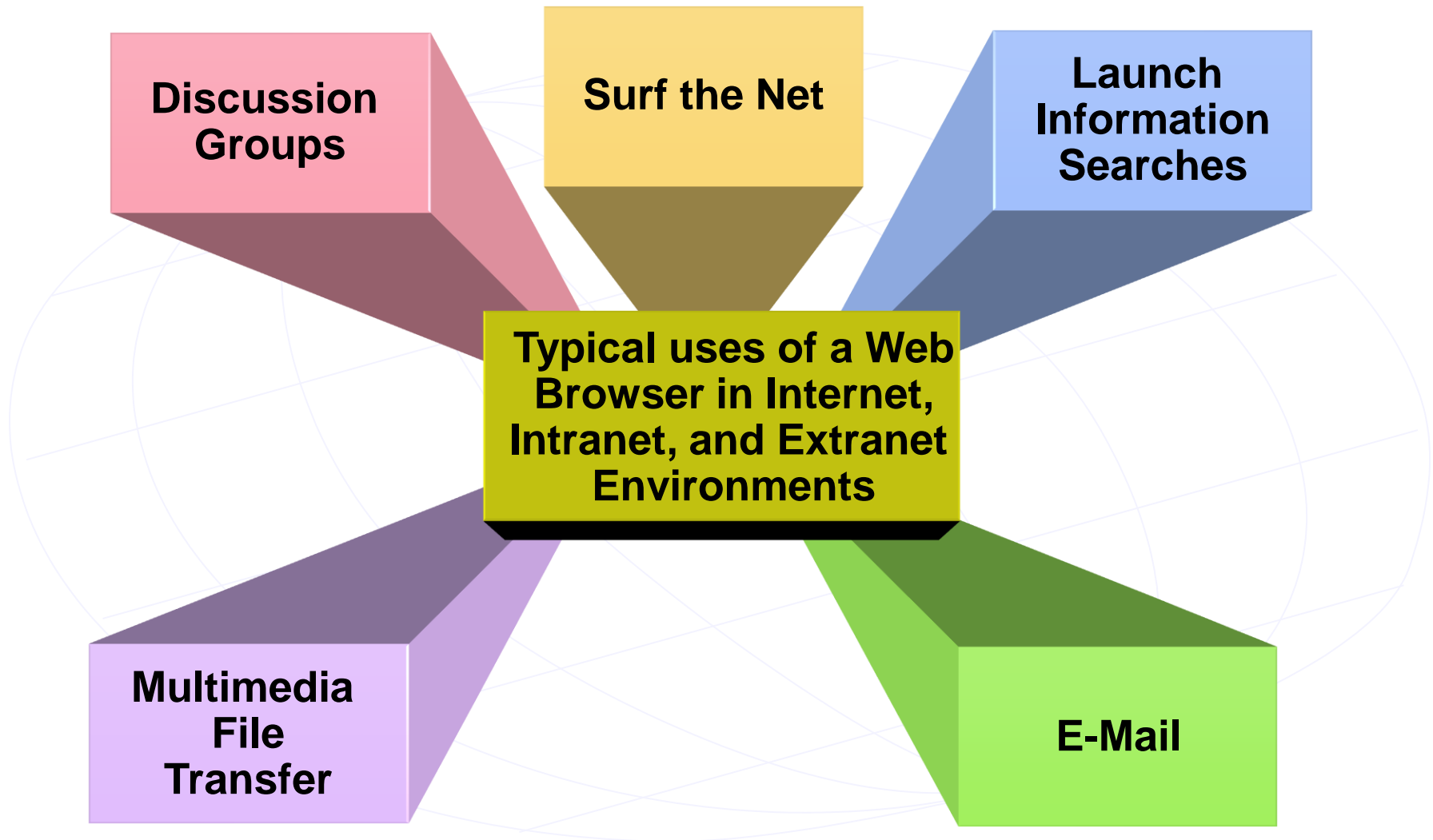
User-Written Programs Machine Languages	Packaged Programs Symbolic Languages	Operating Systems High-Level Languages	DBMS Fourth-Generation Languages Microcomputer Packages	Natural & Object-Oriented Languages Multipurpose Graphic-Interface Network-Enabled Expert-Assisted Packages
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***Trend:* Toward Visual or Conversational Programming Languages and Tools**

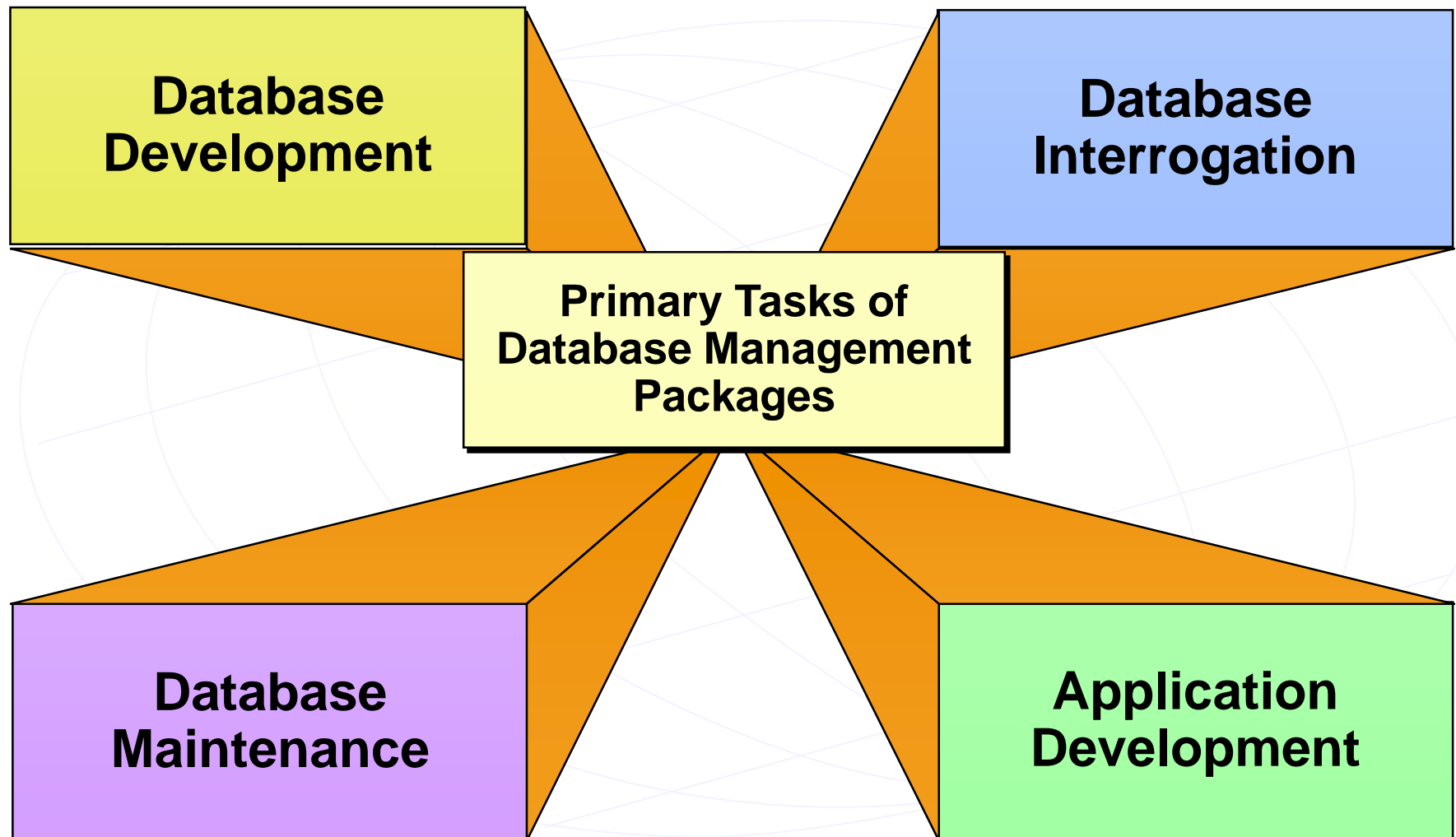
Common General- Purpose Applications

- Electronic Mail
- Word Processing
- Presentation Graphics
- Multimedia
- Personal Information Manager
- Groupware

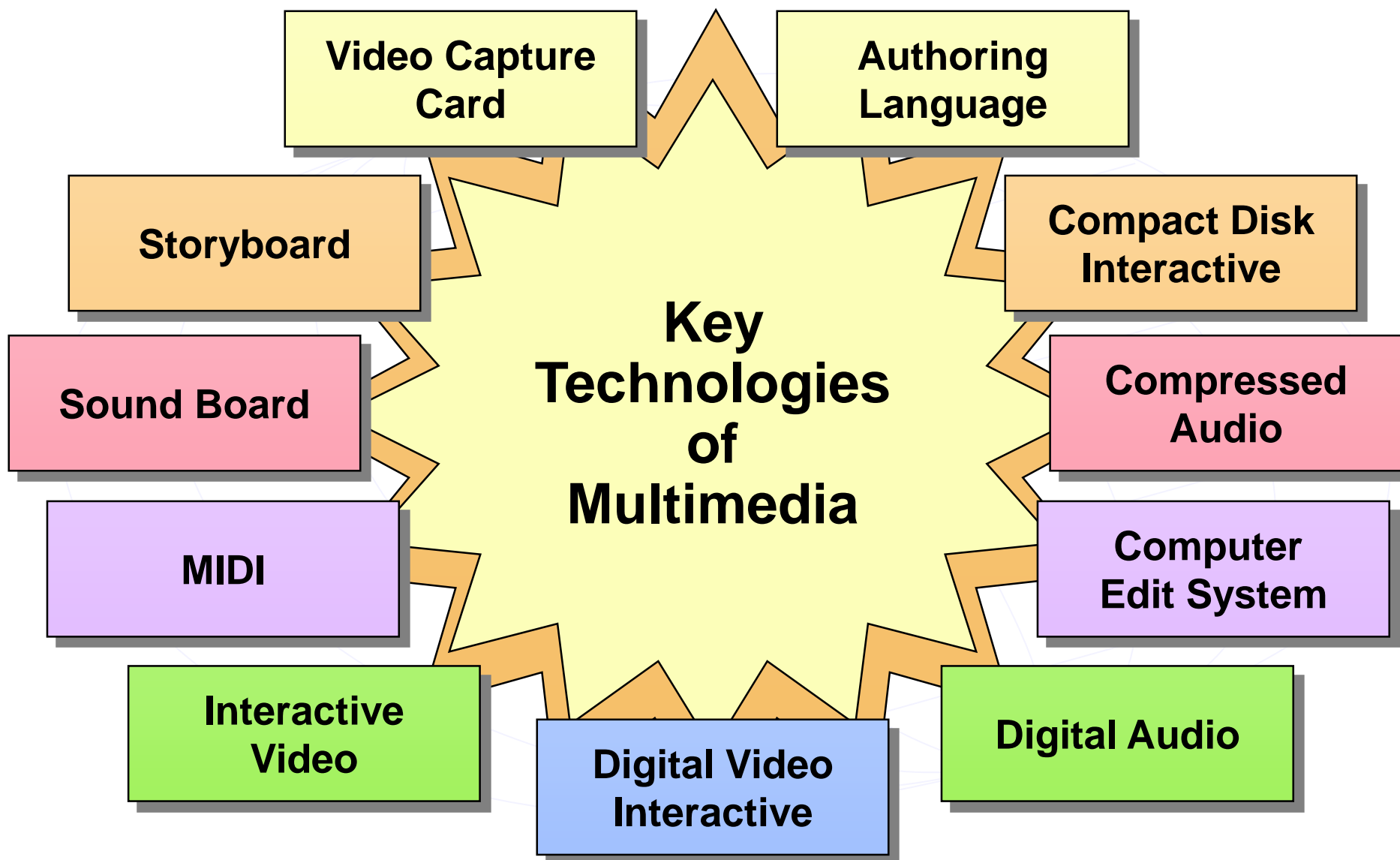
Web Browsers



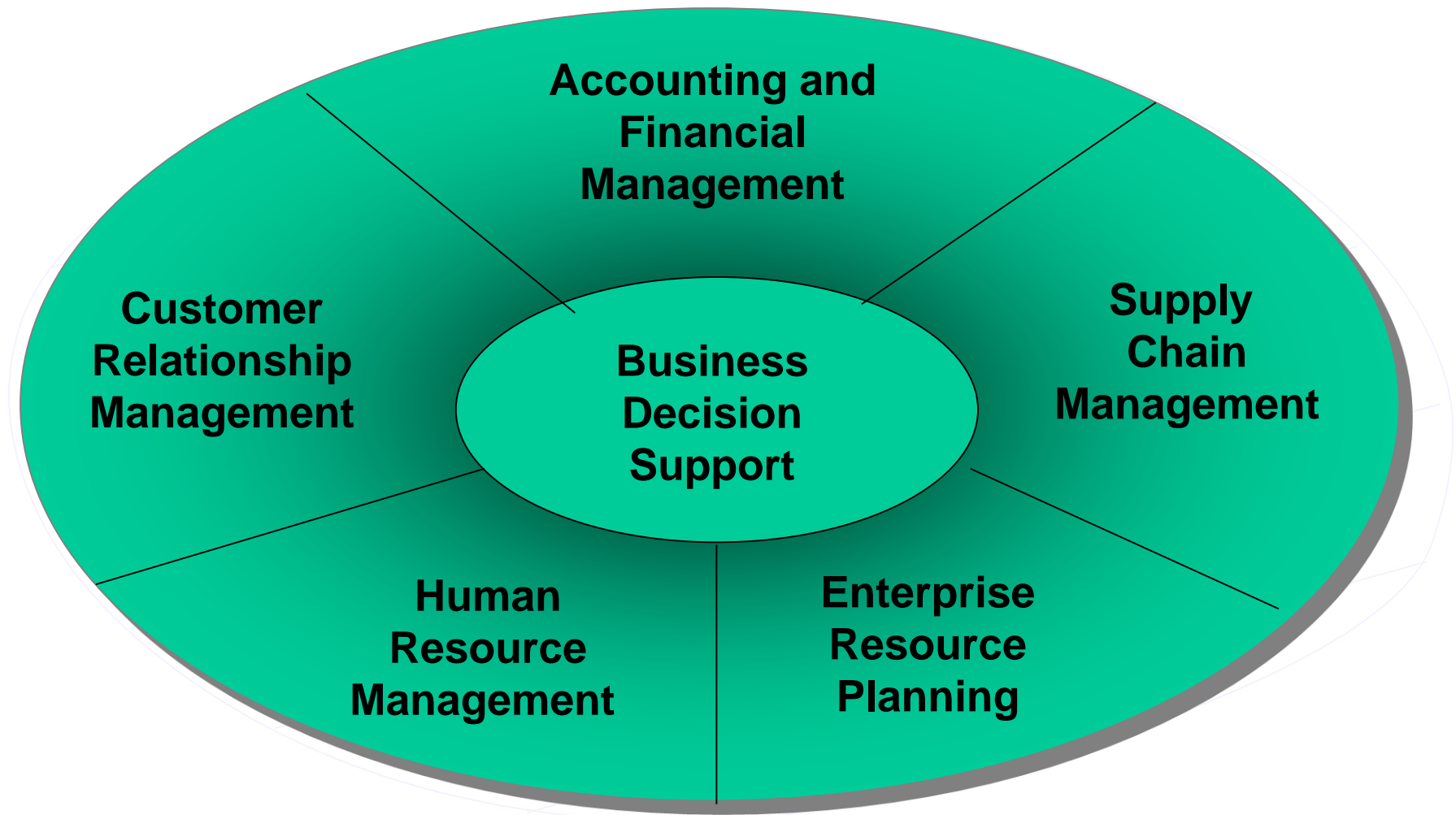
Database Management Packages



Multimedia Technologies



Business Enterprise Application Software



Functions of an Operating System



**User
Interface**

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**Resource
Management**

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**Task
Management**

A blue rectangular box with a black border containing the text "File Management".

**File
Management**

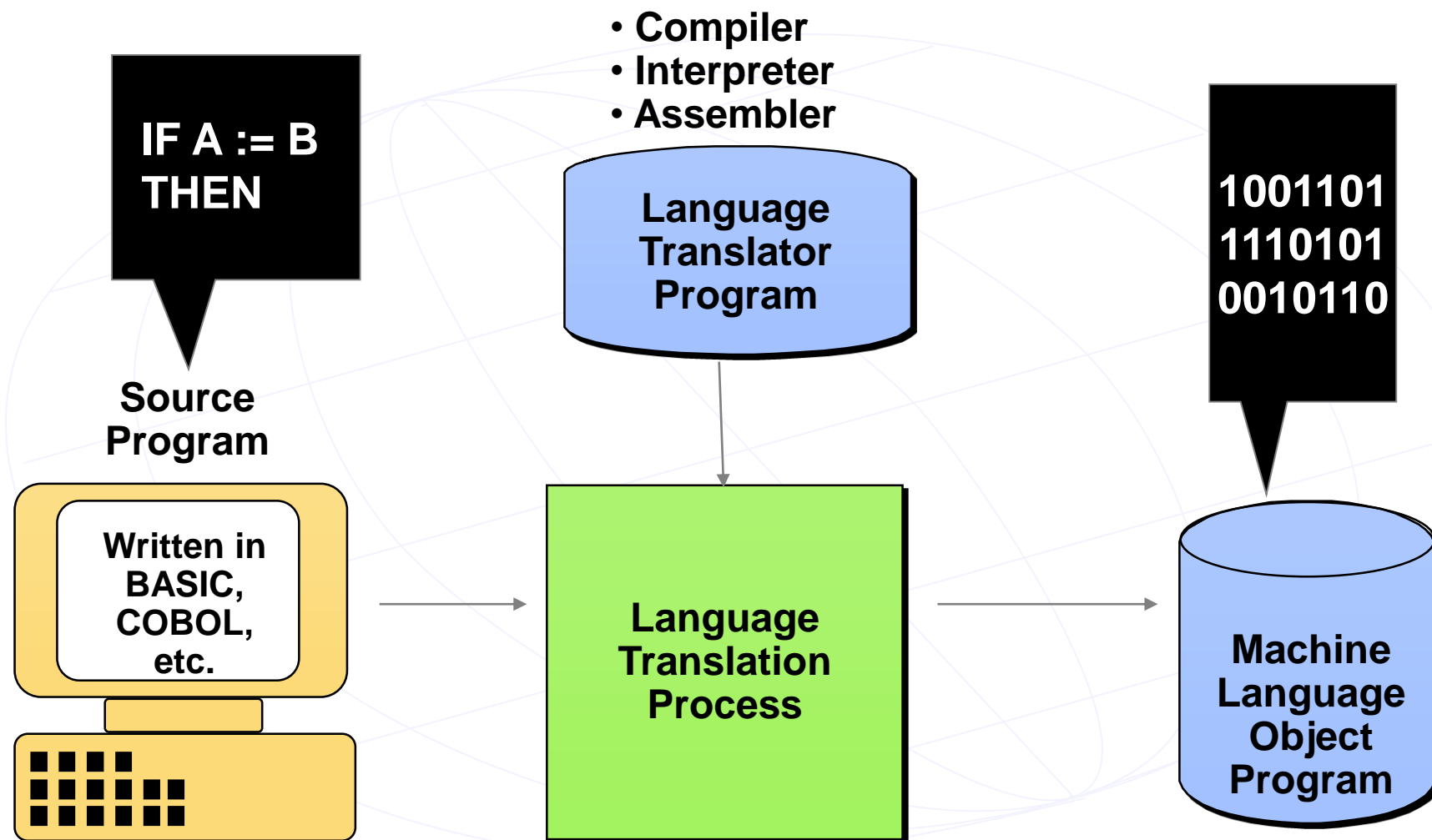
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**Utilities
and Other
Functions**



Categories of Programming Languages

<u>Machine Languages</u> Use binary coded instructions 1001 1001 1100 1101	<u>High Level Languages</u> Use brief statements Compute $X = Y + Z$	<u>Markup Languages</u> Use embedded control codes <H1>First heading</H> <!ELEMENT Product (#Item manuf)>
<u>Assembler Languages</u> Use symbolic coded instructions LOD Y ADD Z	<u>Fourth Generation Languages</u> Use natural statements SUM THE FOLLOWING NUMBERS	<u>Object-Oriented Languages</u> Define objects that contain data and actions Document.write ("Hi There")



Programming Language Translation



Chapter Summary

-  **Computer software consists of two major types of programs: application software that directs the performance of a particular end user task, and system software that controls and supports the operations of a computer system.**
-  **Application software includes a variety of programs that can be segregated into general-purpose and application-specific categories.**

Chapter Summary (cont)

-  **System software can be subdivided into system management programs and system development programs. The former is used to manage hardware, software, networks, and data resources. The latter is used by IS specialists to develop computer programs.**
-  **An operating system is an integrated system of programs that supervises the operations of the CPU.**

Chapter Summary (cont)

- **There are 5 major levels of programming languages. Language translator programs convert programming language instructions into machine language instructions.**