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Coimbatore- 49

DEPARTMENT OF COMMERCE WITH INFORMATION TECHNOLOGY

21UCI507 -Business Information Technology

Introduction to Computer Software

Mrs.M.Viveka, MCA., M.Phil., (Ph.D).,

Assistant Professor,

Department of Commerce with Information Technology

Software

Computer Software is a set of programs, instructions, or data that tells the computer how to perform specific tasks.

Software is the **intangible part** of a computer system that controls the operation of hardware.

👉 Hardware = What you can touch

👉 Software = What you cannot touch but controls the computer

Software

Definition

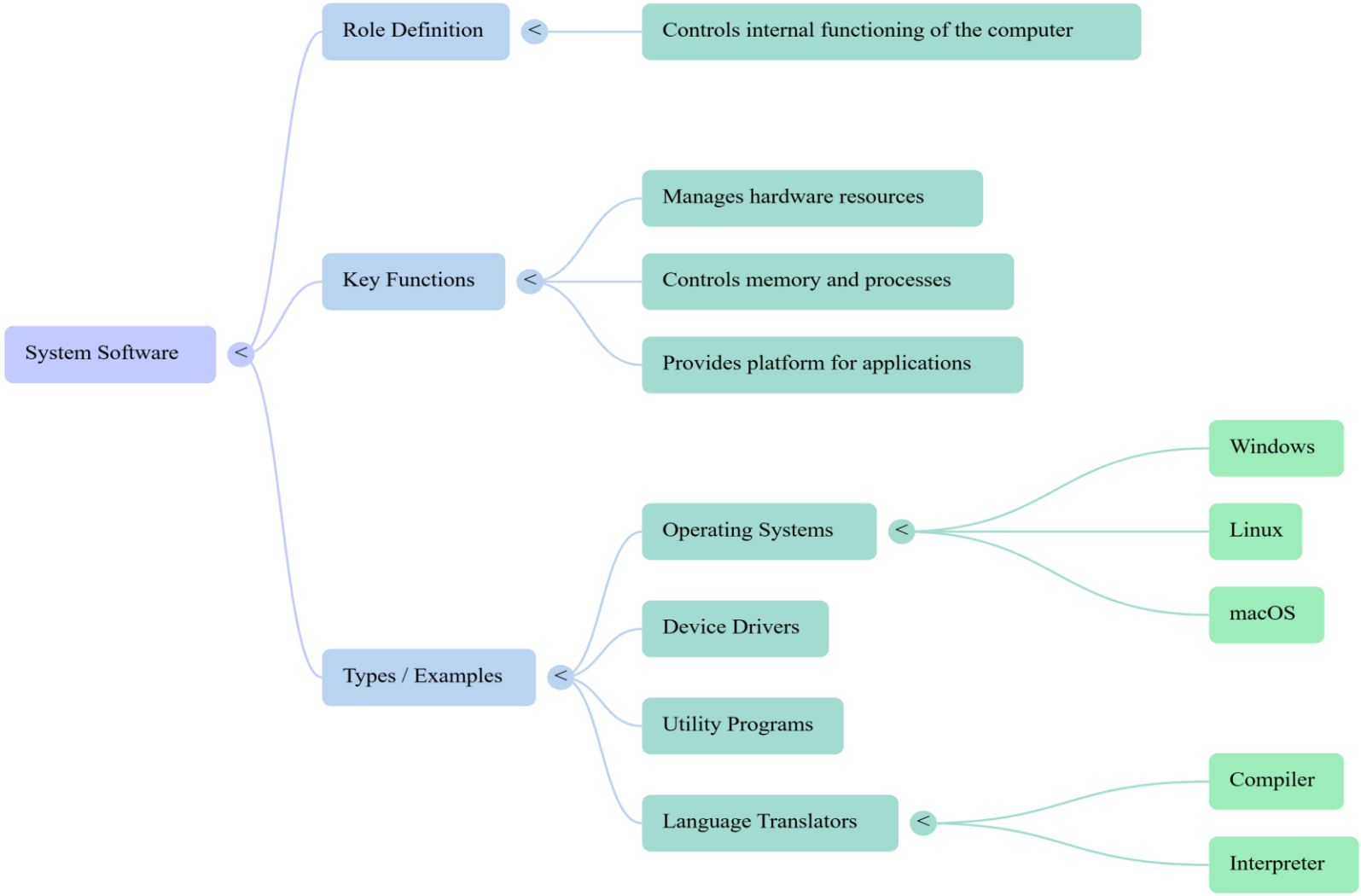
Collection of programs and related data

Instructs the computer to perform particular operations and solve user problems.

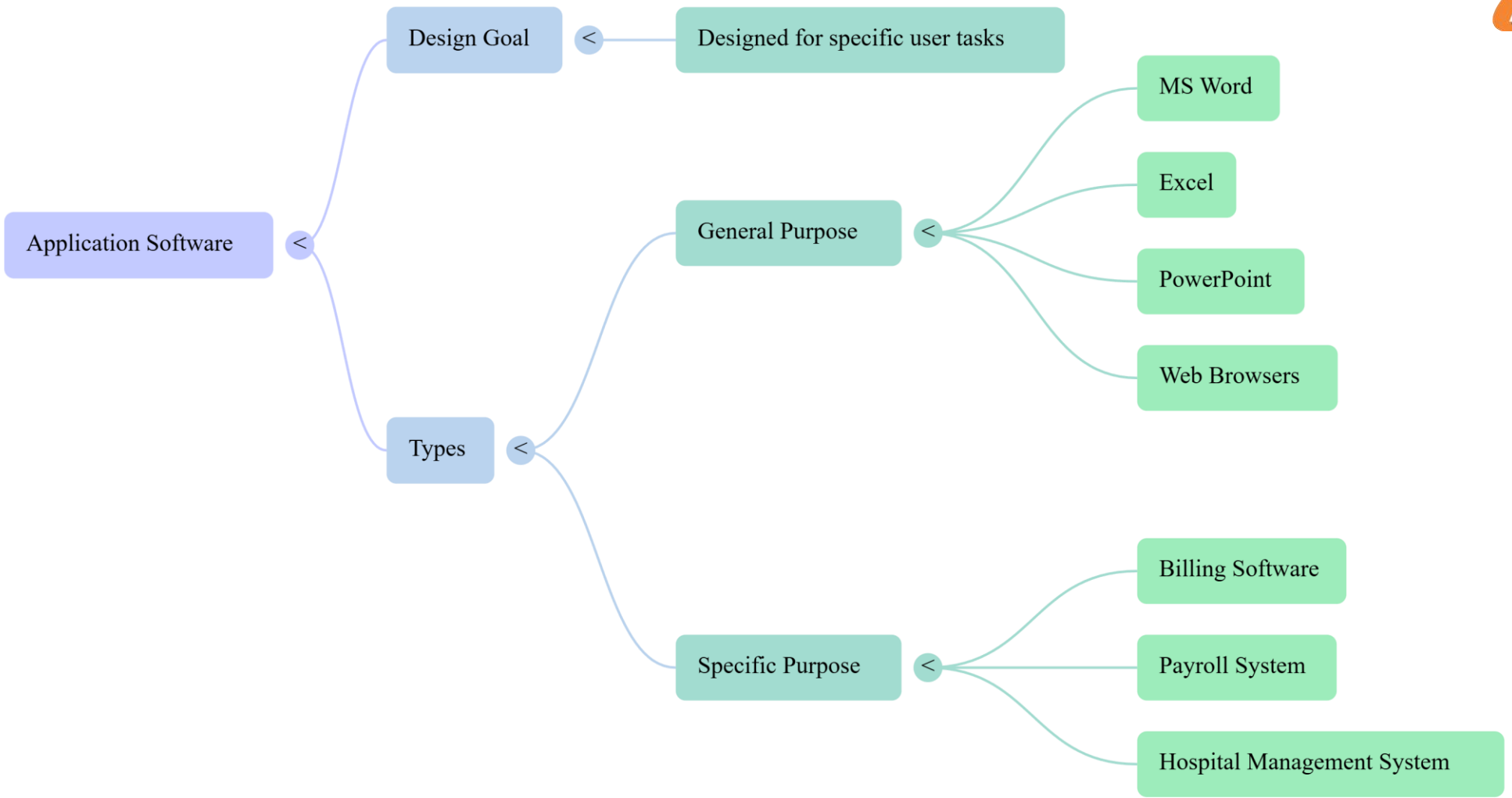
Importance of Software

- Makes hardware functional
- Executes user commands
- Controls system operations
- Helps perform tasks like typing, browsing, designing, etc.
- Acts as an interface between user and hardware

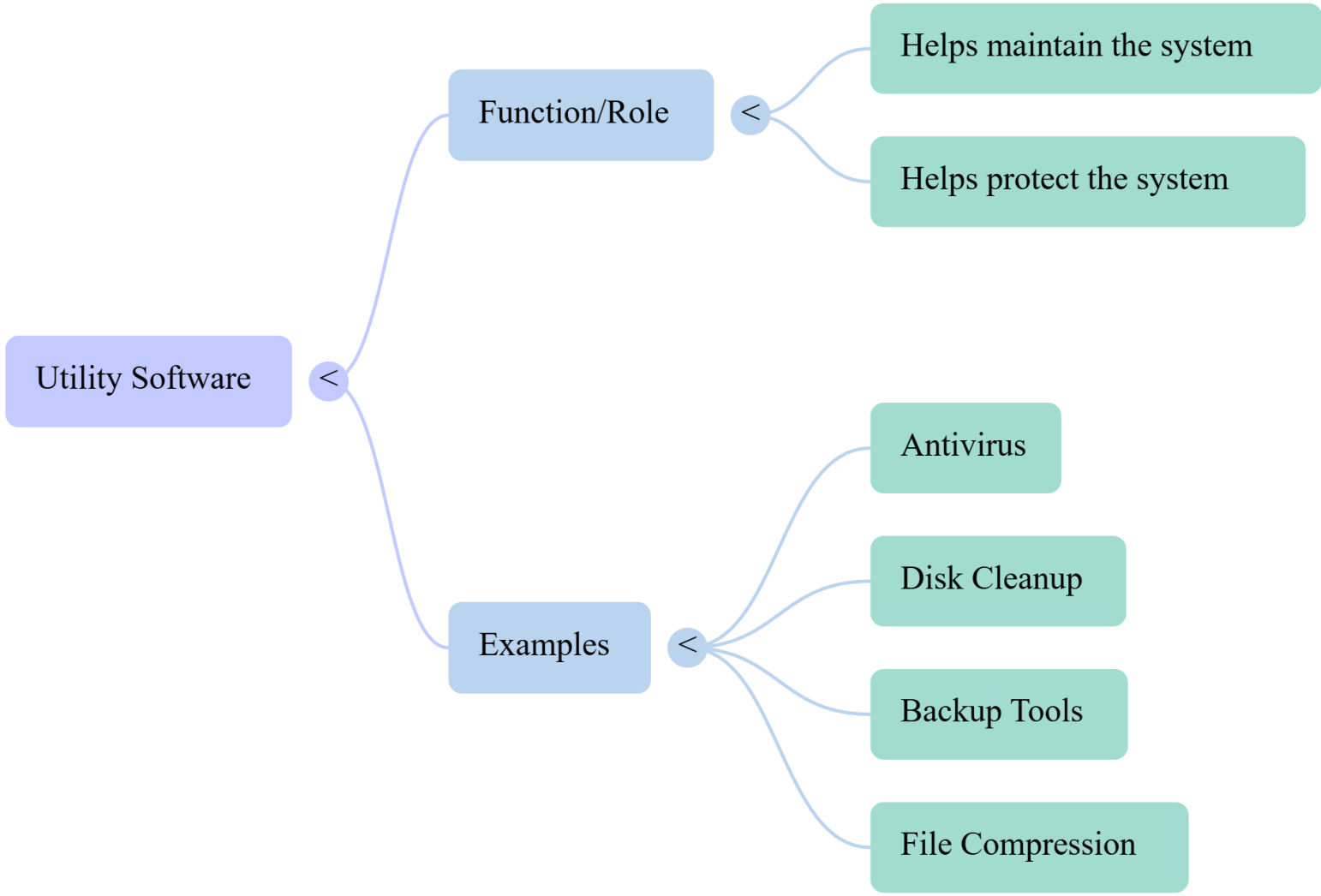
Types of Computer Software



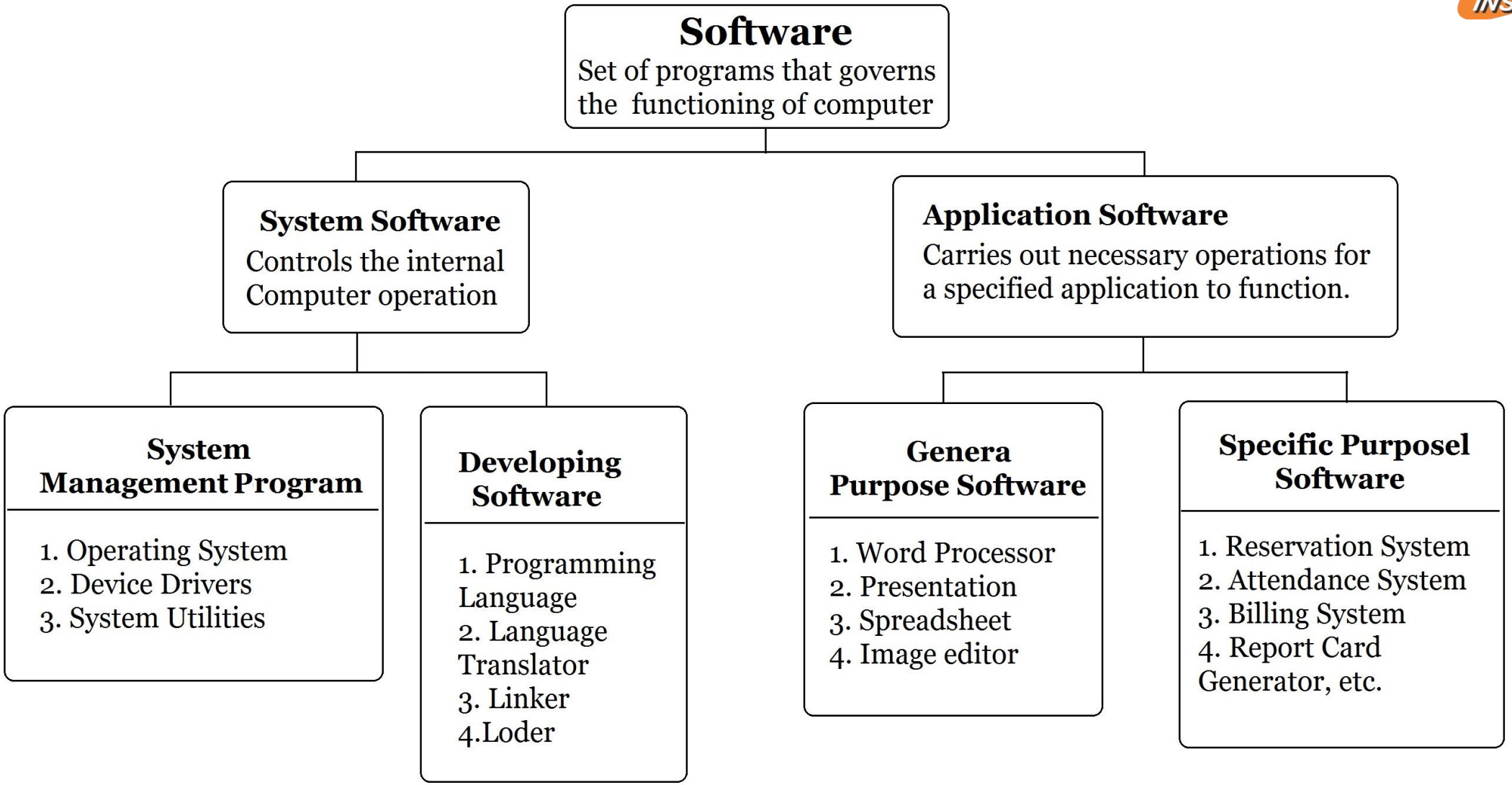
Types of Computer Software



Types of Computer Software



Software Classification Diagram



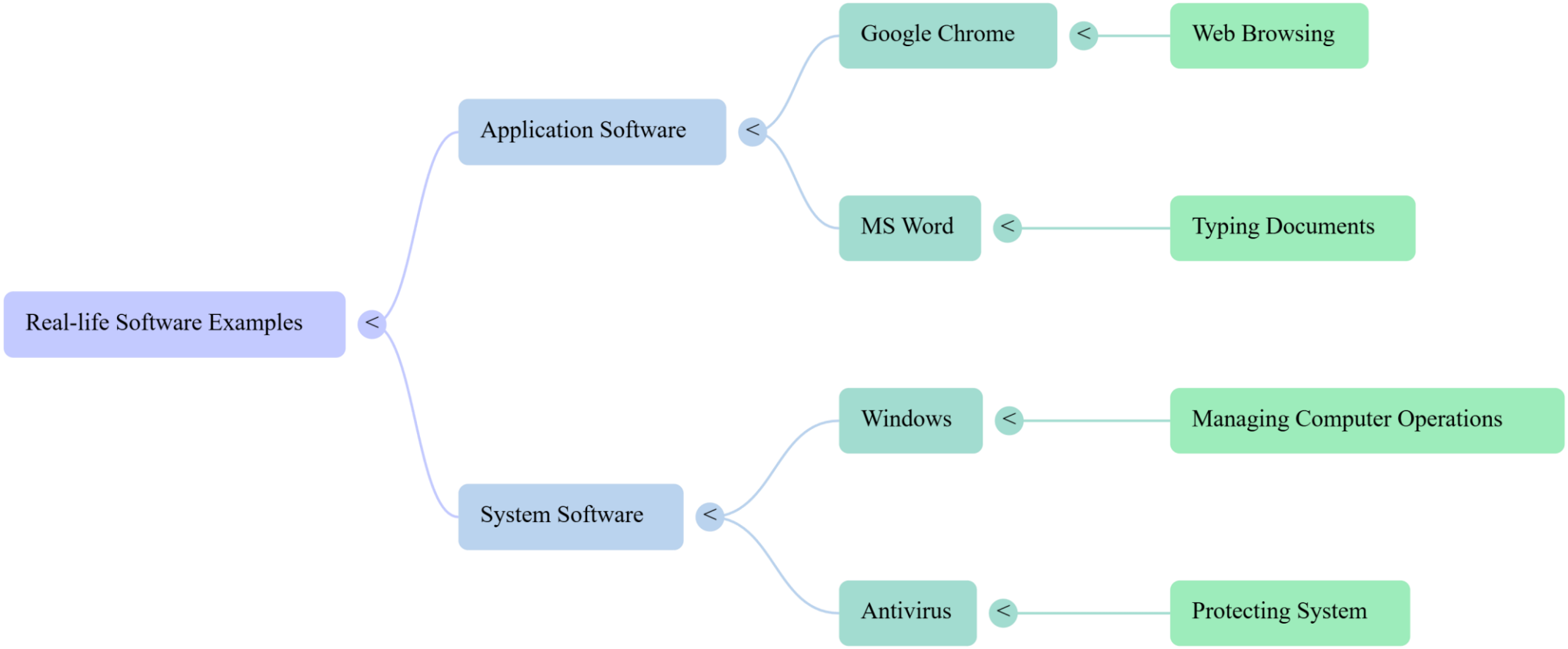
Characteristics of Software

- Non-physical (cannot be touched)
- Easily modifiable
- Created by programming
- Can be copied and stored
- Requires hardware to run

Difference Between Hardware and Software

Hardware	Software
Physical components	Programs and instructions
Can be touched	Cannot be touched
Example: Keyboard	Example: MS Word

Mind Map of Real life software example



Case Study

Designing a Student Attendance Management Software for a College

1. Empathize (Understand Users & Their Needs)

The college currently uses **paper-based attendance**, which causes problems:

- Attendance sheets get **lost or damaged**.
- Manual calculation of attendance percentage takes **a lot of time**.
- Students cannot check their attendance regularly.
- Faculty find it difficult to maintain **multiple class records**.

Users:

Faculty, Students & Department admins

They all want a **simple, fast, and reliable software tool** to manage attendance.

Case Study

2. Define (State the Core Problem)

The college needs a software solution that:

- Allows teachers to **mark attendance quickly**.
- Automatically generates **attendance percentage**.
- Stores data safely.
- Let's students view attendance anytime.
- Reduces manual work for faculty.

Problem Statement:

"How might we build a user-friendly attendance software that saves time and avoids errors?"

3. Ideate (Generate Possible Software Solutions)

The team brainstorms possible features:

Software Ideas:

- Web-based attendance portal
- Mobile app for quick marking
- QR-code based student check-in
- Auto-generated reports for each class
- Alerts for low attendance
- Dashboard for students & faculty

Case Study of Software

4. Prototype (Build a Basic Version)

A simple prototype is created with:

- **Login page** for faculty and students
- **Class list** to select subjects
- **Attendance marking screen** (Present, Absent, Late)
- **Dashboard** showing attendance percentage
- **Download Excel report** button

5. Test (Collect Feedback & Improve)

Feedback from Faculty:

- "Marking attendance is fast and simple."
- "Need an option to mark all students present at once."
- "Add a feature for *bulk upload* of student lists."

Feedback from Students:

- "Attendance percentage is very clear."
- "Notifications for low attendance will really help."

Case Study

Final Improvements:

- Added **Mark All Present** button
- Added **Auto alert for <75% attendance**
- Included **Student Profile** page
- Improved user interface with bigger buttons

Final Outcome

The attendance software successfully:

- Saves **faculty time**
- Reduces **manual errors**
- Makes **students responsible** for attendance
- Provides a **centralized database** for the department
- Improves overall administration efficiency

Next Topic:

Operating System