Interactive Computer Graphics (COM524T)

Components of Interactive Computer Graphics

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Types of Computer Graphics

Non-interactive CG (NICG)

Interactive CG (ICG)

NICG vs ICG

NICG

- Passive: No direct communication between the user and the system

- User doesn't have any control over the image that is shown on the screen
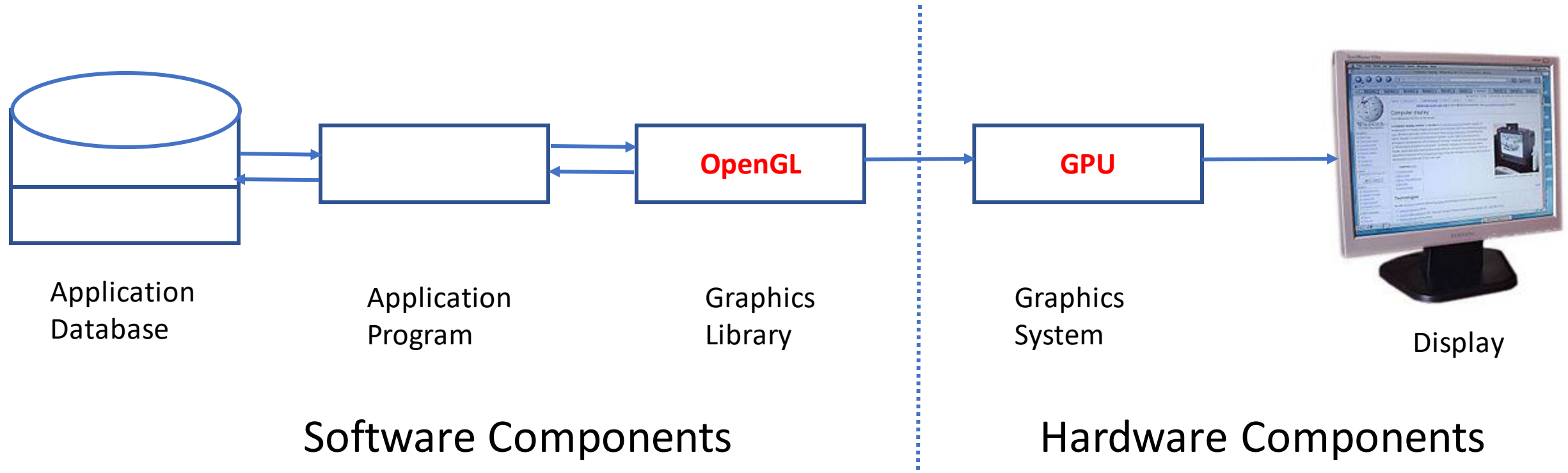
- Ex: Screen savers

ICG

- Active: Direct communication between the user and the system

- It involves a two-way communication between the user and the computer

- User controls the contents, structures, appearance of objects, display pattern etc.

- Ex: Clicking an image
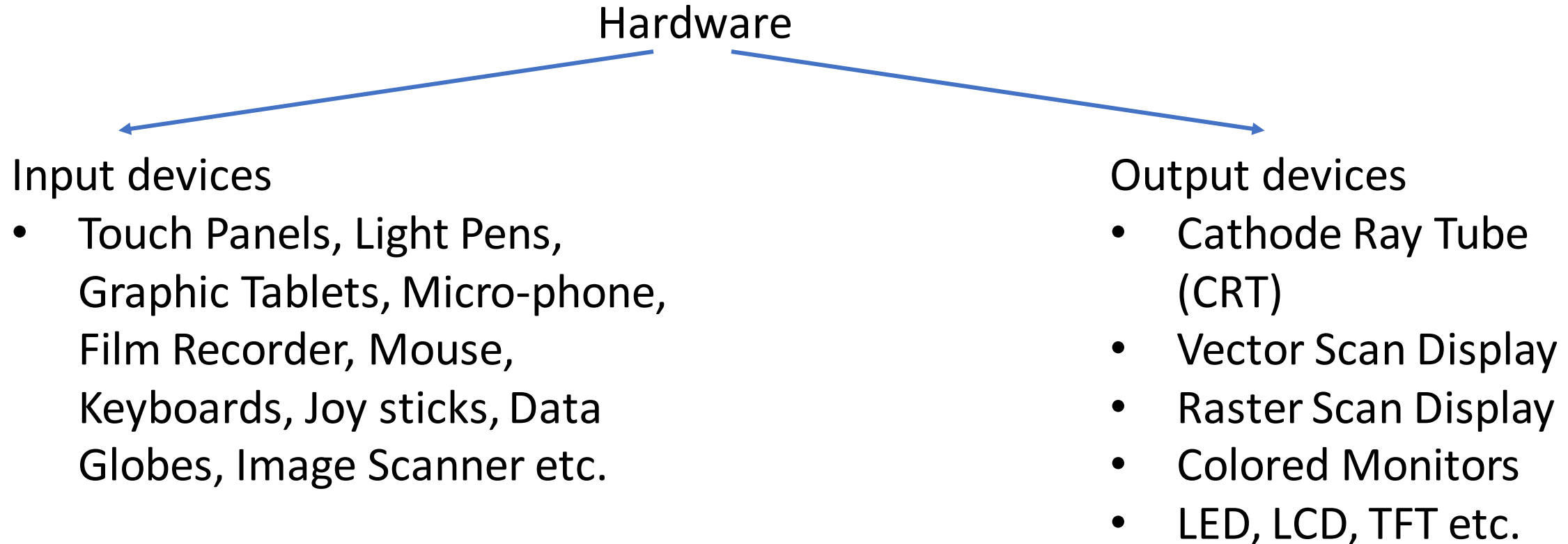
Basic Components of ICG Systems

- Input: Mouse, keyboard, touch panel, tablet etc.

- Processing: Algorithmic part

- Display/Output: Screen, paper based printers, Video recorder etc.

Conceptual Frame-work for ICG

Application
Database

Application
Program

Graphics
Library

Graphics
System

Display

Software Components   **Hardware Components**

- Application program maps all application objects to images by invoking the graphics library
- Graphics system acts as interface between H/W and S/W components
- GPU is optional, usually the video card of the system is the graphics hardware

Hardware and Software of ICG

Hardware

Input devices
- Touch Panels, Light Pens, Graphic Tablets, Micro-phone, Film Recorder, Mouse, Keyboards, Joy sticks, Data Globes, Image Scanner etc.

Output devices
- Cathode Ray Tube (CRT)
- Vector Scan Display
- Raster Scan Display
- Colored Monitors
- LED, LCD, TFT etc.

Hardware and Software of ICG

- Software: Mostly used for processing images
  - Adobe Photoshop: Primary purpose is to edit images
  - Maya 3D: Animation software
  - CAD: Computer Aided design software for industrial designs
  - Corel draw: For creating and editing images
  - And Many more