

Computer Graphics

LECTURE 02

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Last Class Overview

- ▶ Introduction to Computer Graphics
- ▶ Areas
- ▶ Application

Today's Agenda

- ▶ Introduction to Computer Graphics (Cont.)
 - ▶ Visualization
 - ▶ Image Processing
 - ▶ Graphical User Interfaces (GUI)
- ▶ Overview of Graphics Systems
 - ▶ Display Devices

Visualization

- ▶ Representing data with graphical illustrations is called **visualization**
- ▶ Producing graphical representations for scientific, engineering, and medical data **sets** and processes is generally referred to as **scientific visualization**
- ▶ The **business visualization is used** in connection with data **sets** related to commerce, industry, and other nonscientific **areas**.

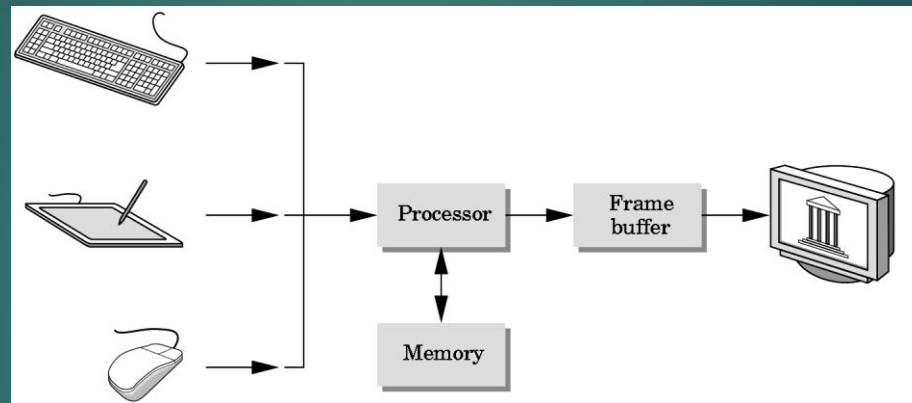
Image Processing

- ▶ Image **processing** applies techniques to modify or interpret existing pictures
 - ▶ Improving pictures
 - ▶ Machine vision
 - ▶ i. e., machine perception of the visual information (robotics)

Graphical User Interfaces (GUI)

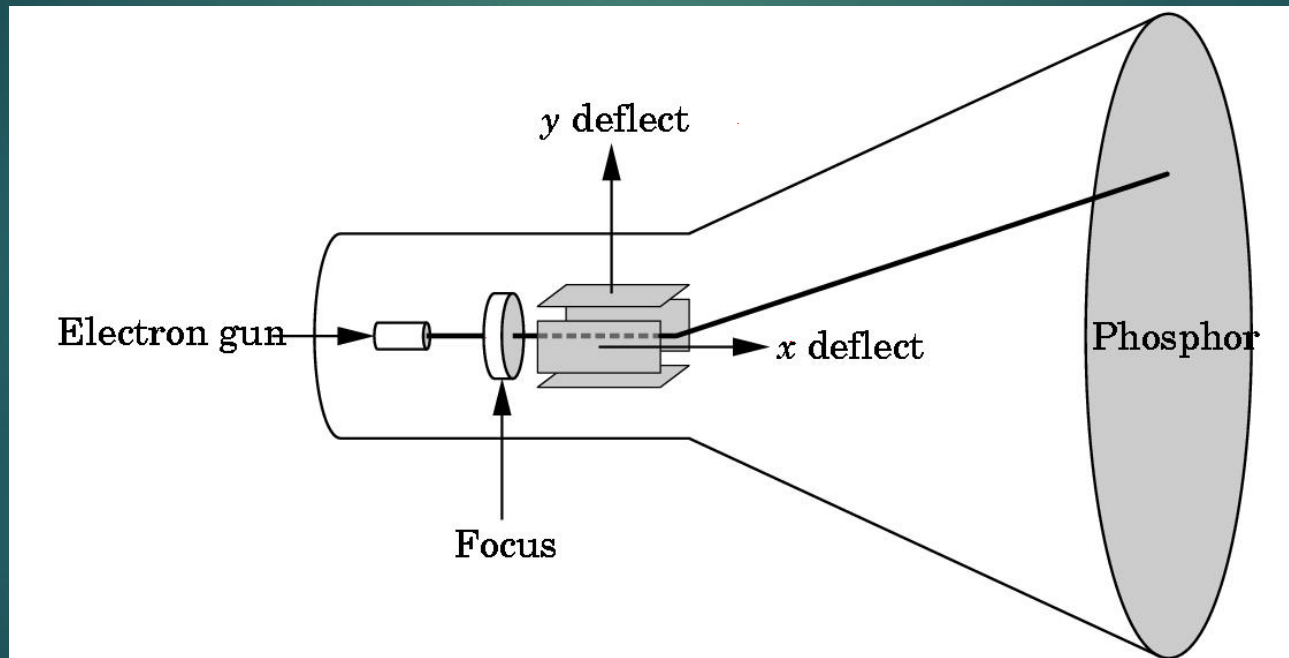
- ▶ Graphical User Interfaces display menus and icons for fast selection of any processing required.
 - ▶ The user does not have to memorize commands or capabilities of a computer software. All options provided by the software can be explored just by navigating using mouse clicks.
 - ▶ A windows manager allows user to display multiple windows. Each window can process different data (weather graphical or text). A window can be made active just by clicking mouse on it.

Graphics Systems



Output Devices

- ▶ Cathode Ray Tube (CRT)
 - ▶ Calligraphic Mode
 - ▶ Raster Mode



Summary

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References

- ▶ Fundamentals of Computer Graphics Third Edition by Peter Shirley and Steve Marschner
- ▶ Interactive Computer Graphics, A Top-down Approach with OpenGL (Third Edition) by Edward Angel.