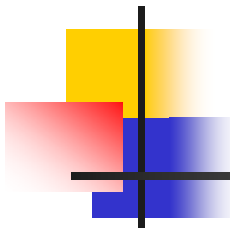


Computers Inside and Out

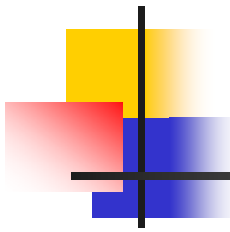
Dr Jim Martin

jim.martin@cs.clemson.edu



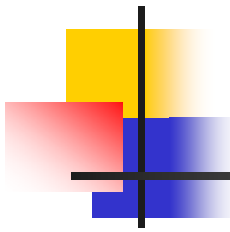
Basics

- External computer parts
- Internal Computer parts



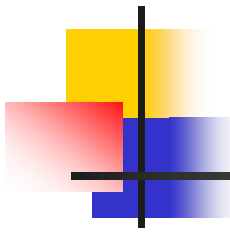
Devices

- Input devices
- Output devices



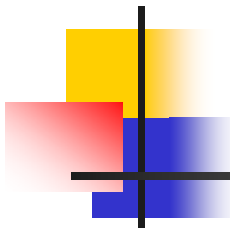
Inside a computer: components

- Power supply
- CPU
- Motherboard
- Cards
 - Sound card
 - Communications card
- BIOS
- RAM : random access memory
- ROM: read only memory
- Disk drives



Bits/Bytes

- Computers speak in terms of 1's and 0's (i.e., in binary!!!)
- A bit is a single 1 or 0
- A byte is a sequence of bits- usually 8
- A character ("A") is mapped to a sequence of 8 bits
 - Every text character that exists uniquely maps to a sequence of 8 bits



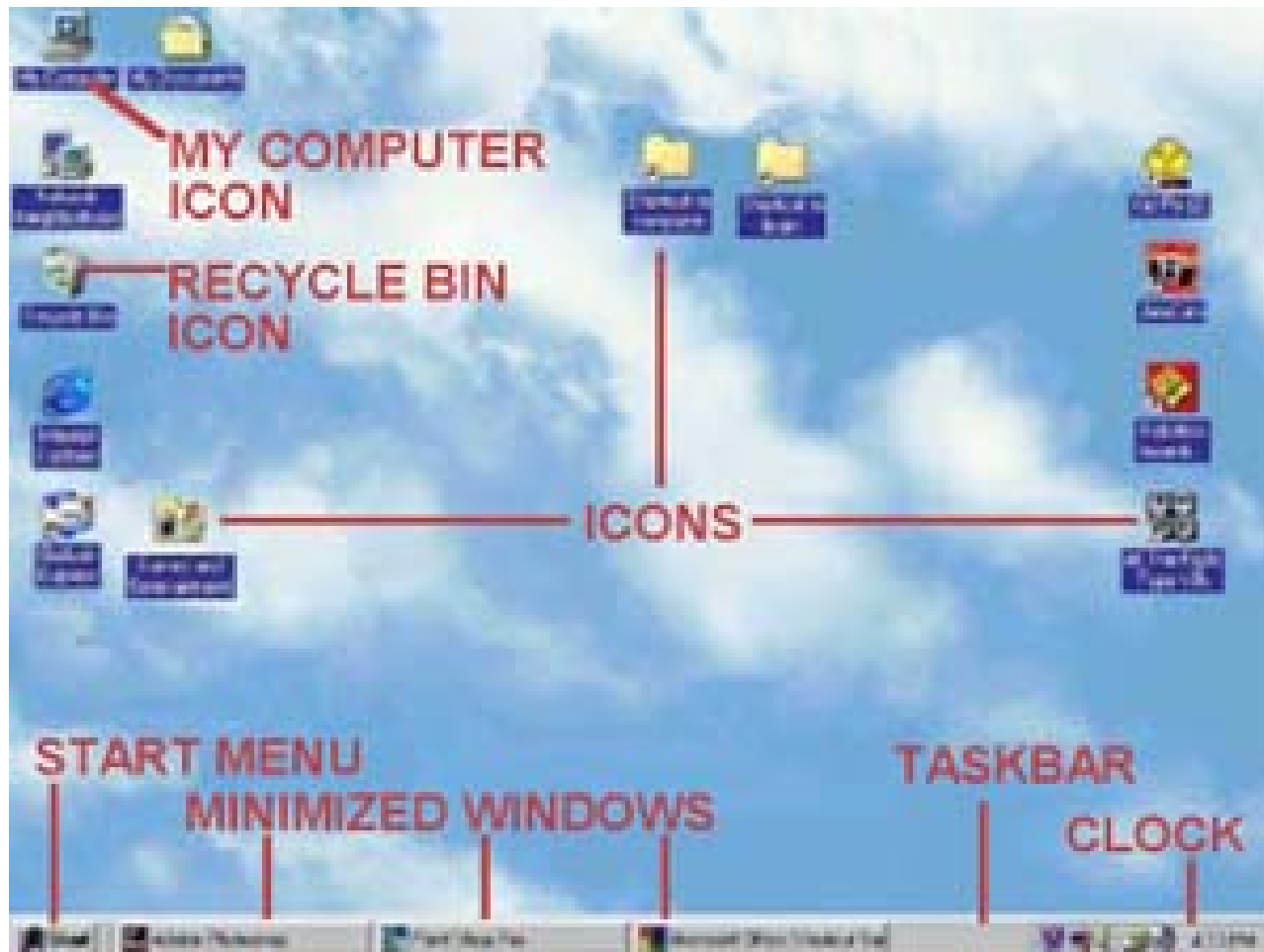
Binary number system

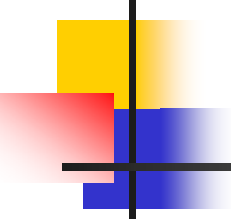
- Binary numbers are a number system made up of 0's and 1's.
- In a base-10 number system, the values of each digit range from 1, 10, 100, 1000, ...
- The values of the first 8 places in binary notation are (highest to lowest):

Bit#	7	6	5	4	3	2	1	0
	128	64	32	16	8	4	2	1

- We show several numbers in binary and in decimal.
 - 0x00000010 = 2 in decimal
 - 0x00000100 = 8 in decimal
 - 0x10000010 = 130 in decimal
 - 0x11111111 = 255 in decimal

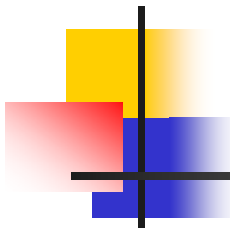
WindowsXP





Exercises (you can work with a partner)

- Explore the control panel:
 - How large is the disk drive on your system?
 - What percentage of the disk is used?
- Microsoft Word and Windows Explorer
 - Using Microsoft Word, create a NEW file called test.doc.
 - Just type in one line in the file (for example: “Hi my name is Roger Rabbit”).
 - Save and exit from Microsoft Word.
 - Start Windows Explorer, find the file and delete it.



Homework (Please work on your own)

- Complete the 3 worksheets and hand them in Thursday morning.