Computers Inside and Out

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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):
  
<table>
<thead>
<tr>
<th>Bit#</th>
<th>7</th>
<th>6</th>
<th>5</th>
<th>4</th>
<th>3</th>
<th>2</th>
<th>1</th>
<th>0</th>
</tr>
</thead>
<tbody>
<tr>
<td>Value</td>
<td>128</td>
<td>64</td>
<td>32</td>
<td>16</td>
<td>8</td>
<td>4</td>
<td>2</td>
<td>1</td>
</tr>
</tbody>
</table>

- 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
Windows XP
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.