Electronics
Analog and Digital Quantities

Terry Sturtevant

Wilfrid Laurier University

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Comparing worlds

The world outside the computer is primarily analog.
The world inside the computer is primarily digital.
The world outside the computer is primarily analog.
Comparing worlds

The world *outside* the computer is primarily *analog*. The world *inside* the computer is primarily *digital*. 
Analog versus digital worlds
Analog versus digital worlds

Analog
Analog versus digital worlds

Analog

Digital
Analog versus digital worlds

Analog
continuous

Digital
## Analog versus digital worlds

<table>
<thead>
<tr>
<th>Analog</th>
<th>Digital</th>
</tr>
</thead>
<tbody>
<tr>
<td>continuous</td>
<td>discrete</td>
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</tbody>
</table>
Analog versus digital worlds

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</tr>
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<tbody>
<tr>
<td>continuous</td>
<td>discrete</td>
</tr>
<tr>
<td>many different quantities (sound, light, temperature, etc.)</td>
<td></td>
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<tr>
<td>many different quantities (sound, light, temperature, etc.)</td>
<td>numbers, represented by electrical signals</td>
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</tbody>
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Analog versus digital worlds

Analog
continuous
many different
quantities (sound, light,
temperature, etc.)
levels matter

Digital
discrete
numbers, represented
by electrical signals
Analog versus digital worlds

Analog
continuous
many different quantities (sound, light, temperature, etc.)
levels matter

Digital
discrete
numbers, represented by electrical signals

events matter
Comparing worlds
Review
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Cello

Mary Had A Little Lamb

Traditional

Free cello sheet music at
http://www.capotastomusic.com
Comparing worlds
Review

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(rh):

E  D  C  D  E  E  E
3 4 5 4 3 3 3

(lh):

Ma - ry  had  a  lit - tle  lamb
2 2 2 3 5 5

D  D  D  E  G  G
4 4 4 3 1 1

lit - tle lamb  lit - tle lamb

E  D  C  D  E  E  E
3 4 5 4 3 3 3

Ma - ry  had  a  lit - tle lamb
3 2 1 2 3 3 3

his  fleece was white as snow
Comparing worlds
Review

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Review

What is different about the analog and digital worlds?
Review

- What is different about the analog and digital worlds?