Unsigned binary numbers

- Each bit represents a power of 2
- For unsigned numbers in a fixed width field
  - the minimum value is 0
  - the maximum value is $2^n - 1$, where $n$ is the number of bits in the field
- Fixed field widths determine many limits
  - 5 bits = 32 possible values ($2^5 = 32$)
  - 10 bits = 1024 possible values ($2^{10} = 1024$)

<table>
<thead>
<tr>
<th>Binary 5, Hex, and Decimal</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Binary</strong></td>
</tr>
<tr>
<td>00000</td>
</tr>
<tr>
<td>10001</td>
</tr>
<tr>
<td>1010</td>
</tr>
<tr>
<td>1111</td>
</tr>
<tr>
<td>1 0000</td>
</tr>
<tr>
<td>1 1111</td>
</tr>
<tr>
<td>1 111 111</td>
</tr>
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