DisplayInBase

Compute the digits for displaying decimal numbers in various bases using successive division.

Analysis

<table>
<thead>
<tr>
<th>Objects</th>
<th>Type</th>
<th>Kind</th>
<th>Movement</th>
<th>Name</th>
</tr>
</thead>
<tbody>
<tr>
<td>decimal number</td>
<td>int</td>
<td>variable</td>
<td>received</td>
<td>n</td>
</tr>
<tr>
<td>base to display</td>
<td>int</td>
<td>variable</td>
<td>received</td>
<td>b</td>
</tr>
</tbody>
</table>

Algorithm

Sometimes it is easier to figure out the recursive step first

1. If n > 0 then (still have digits to go)
   1.1 Display all but the last digit using DisplayInBase (n/b, b)
   1.2 Display the last digit, n\%b

The base case is to do nothing when n <= 0

Code

```cpp
// Precondition: n > 0, 2 <= b <= 8
void DisplayInBase (int n, int b)
{
    if (n > 0)    // still have digits to go
    {
        DisplayInBase (n/b, b); // display all but last digit
        cout << n%b;            // display the last digit
    }
} // end DisplayInBase
```