Assignment 1 – Skript-Aufgaben 32-33 (4 points)

(i) \( x \neq 3 \land y \land -3 < 4 - 2 \times 3 \)
(ii) \( z > 1 \land !x \land 2 - 2 == 1 \land y \)
(iii) \( 3 \times z > 1 \lor 1 / x \neq 0 \land 3 + 4 >= 7 \)

a) Parenthesize the above expressions according to operator precedences and associativities.

b) Evaluate the expressions step-by-step, assuming that \( x, y, \) and \( z \) are all of type \texttt{int} with \( x=0, y=1, \) and \( z=2. \)

Assignment 2 – Skript-Aufgabe 48 (4 points)

Write a program \texttt{cross_sum.cpp} that inputs a natural number \( n \) (including 0) and outputs the sum of the (decimal) digits of \( n. \)

<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Cross sum of ( n = ? )</td>
<td>0</td>
</tr>
<tr>
<td>Cross sum of 0 is:</td>
<td>0</td>
</tr>
<tr>
<td>Cross sum of ( n = ? )</td>
<td>8</td>
</tr>
<tr>
<td>Cross sum of 8 is:</td>
<td>8</td>
</tr>
<tr>
<td>Cross sum of ( n = ? )</td>
<td>86400</td>
</tr>
<tr>
<td>Cross sum of 86400 is:</td>
<td>18</td>
</tr>
</tbody>
</table>

Assignment 3 – Skript-Aufgabe 47 (4 points)

Write a program `dec2bin.cpp` that inputs a natural number `n` (including 0) and outputs the binary digits of `n` in reverse order.

### Judge Examples

- **Number n =? 2**
  - Reverse binary representation is: 01

- **Number n =? 11**
  - Reverse binary representation is: 1011

- **Number n =? 0**
  - Reverse binary representation is: 0

### Submission:


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Challenge - Skript-Aufgabe 36 (8 points)

(Submission by email.)