Advanced Programming

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Excercise 4

What do do?

Write a program in C, which enumerates all solutions to a binary program of the form:

$$Ax \leq b, x \in \{0, 1\}$$

with A being a $m \times n$ matrix, and b a m vector, with $m, n \leq 32$.
Example:

$$
\begin{aligned}
2x_1 + 3x_2 + 5x_3 - 4x_4 &\leq 8 \\
3x_1 - 6x_2 + 8x_4 &\leq 10 \\
x_3 + x_4 &\leq 1
\end{aligned}
$$

The input format for the above would be:

```
4  # columns (variables)
3  # rows (constraints)
2 3 5 4 <= 8
3 6 0 8 <= 10
0 0 1 1 <= 1
```

Everything after an # in a line should be discarded as a comment.
The program should read the data from a file and write out all solution vectors.
Be aware that we will continue to work on this program and change and extend it further.