Boolean Expression Demo

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Introductions

Recall the Boolean expression from the Discrete mathematics course. Where there are certain propositional variables: p, q, r, s , t , u and if you need more than that you can use p1, p2, p3, …… and there are three basic operations: + , ., ~ , + is for the OR operations, . Is for the AND operations and the third one is for the negations. And if you have certain Boolean expression you can give the value of that expression based on the value of the variables. For example p+qr and the values of p is 1 and q is 1 and r is 0 , then the value of the expression is 1.
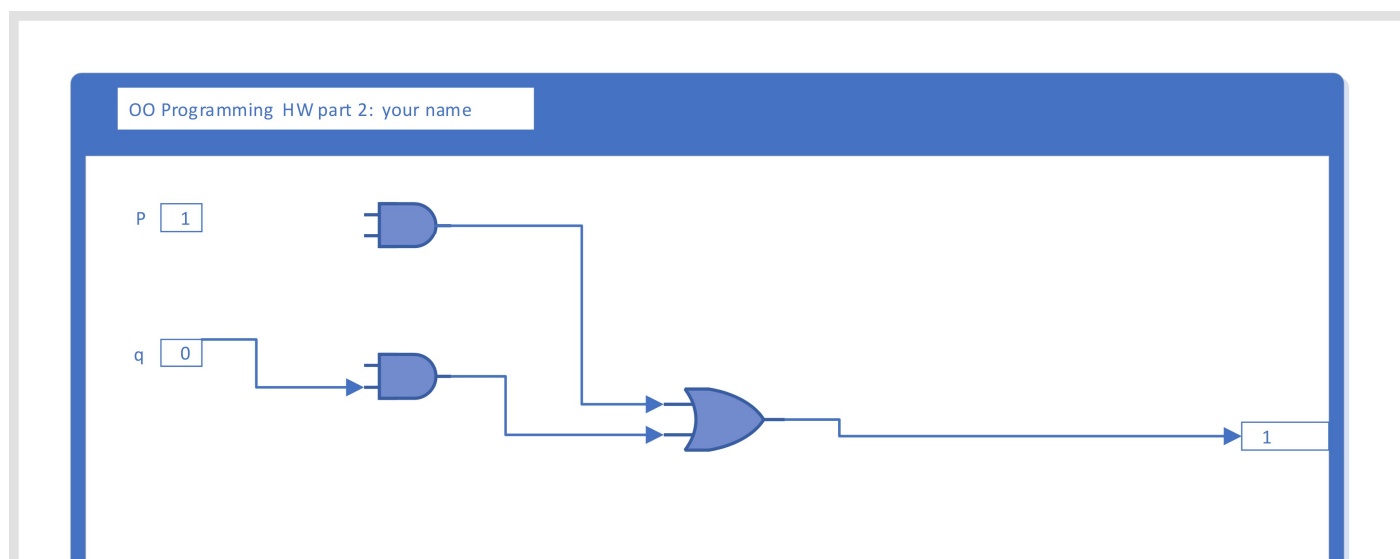
What you need to do with java programming is to build a system that consists of two parts:

First Part: you have a text file that have many expression, each expression is in single line. You need to read each expression and system will give the value of each expression based on input values for each logical variable.

Second part: you need to have away to read a Boolean expression and the system will draw the gates of the system on a panel form then based on variable values of input the output of the expression will show up at the end. You can indicated that using the color or (H/L) for each output gate. The graph below shows such case.

Boolean Expression Demo - Drawing

r   1

No of AND Gates: 3   No of OR Gates: 1 No of Invertor : 0