FPGA LAB - Assignment 1

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Download all c codes from

https://github.com/PeriPriyanka/FPGA_5811/Assignment1

and latex-tikz codes from

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1 Problem

(2015-1-Q.6(a)) Verify the following boolean law:

$$U'+V = U'V'+U'V+UV \tag{1.0.1}$$

2 Solution

Consider the RHS of the boolean expression given

$$U'V' + U'V + UV \tag{2.0.1}$$
$$U'(V'+V) + UV \tag{2.0.2}$$

Since V′+V=0, equation (2.0.2) can be written as,

$$U'+UV \tag{2.0.3}$$

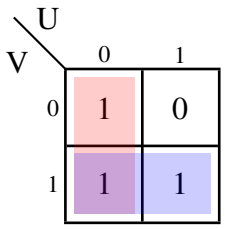
From the Distributive property of boolean laws,

$$X + X'Y = X + Y \tag{2.0.4}$$

Therefore, equation (2.0.3) can be written as,

$$U' + V \tag{2.0.5}$$

LHS = RHS, therefore, U′+V = U′V′+U′V+UV.
Solving the expression by applying the K-map to the RHS of the boolean expression U′V′+U′V+UV.



Expression is reduced to U′+V.
Therefore,U′+V = U′V′+U′V+UV.