Introduction to Computer Science
Jacobs University Bremen
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Course: CH-232-A
Date: 2019-11-01
Due: 2019-11-08

ICS 2019 Problem Sheet #8

Problem 8.1: *quine-mccluskey algorithm* (4+4+2 = 10 points)

A Boolean function φ is defined using the following sum of minterms:

$$\varphi(A,B,C,D,E) = m_0+m_2+m_4+m_6+m_9+m_{10}+m_{13}+m_{14}+m_{15}+m_{16}+m_{17}+m_{21}+m_{26}+m_{28}+m_{30}+m_{31}$$

a) Calculate the prime implicants of φ.

b) Construct the prime implicant chart and identify the essential prime implicants.

c) Write out all minimal boolean expressions defining φ.