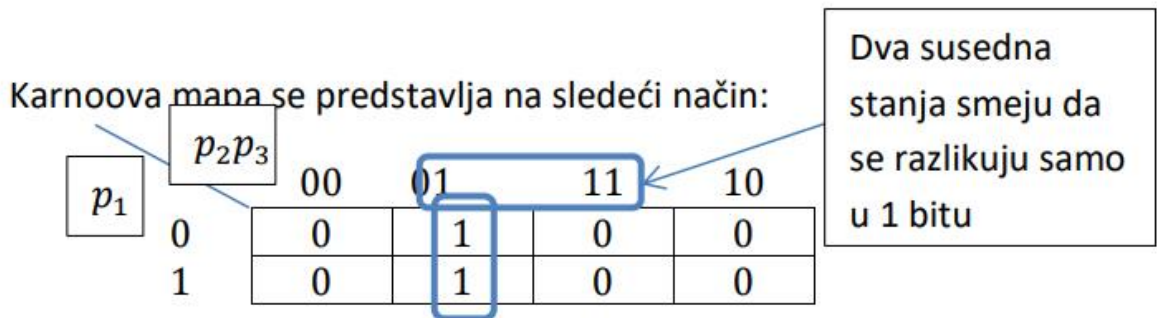


Minimalizacija DNFa i KNFa Karnoovom mapom i algebarskim transformacijama funkcije sa 3 ulaza

p_1	p_2	p_3	f
0	0	0	0
0	0	1	1
0	1	0	0
0	1	1	0
1	0	0	0
1	0	1	1
1	1	0	0
1	1	1	0

DNF: $(\overline{p_1} \cdot \overline{p_2} \cdot p_3) + (p_1 \cdot \overline{p_2} \cdot p_3)$

Karnoova mapa se predstavlja na sledeći način:



Minimalizacija Karnoovom mapom: $\overline{p_2} \cdot p_3$

* Postupak minimalizacije Karnoovm mapom je opisan u dokumentu Logičke osnove obrade podataka

Minimalizacija algebarskim transformacijama:

$$(\overline{p_1} \cdot \overline{p_2} \cdot p_3) + (p_1 \cdot \overline{p_2} \cdot p_3) = \overline{p_2} \cdot p_3 \cdot (\overline{p_1} + p_1) = \overline{p_2} \cdot p_3 \cdot 1 = \overline{p_2} \cdot p_3$$

I Zakon distributivnosti: $(A * B) + (A * C) = A * (B + C)$

Važi u aritmetici i Bulovoj algebri

$$\text{KNF: } (p_1 + p_2 + p_3) \cdot (p_1 + \overline{p_2} + p_3) \cdot (p_1 + \overline{p_2} + \overline{p_3}) \cdot (\overline{p_1} + p_2 + p_3) \cdot (\overline{p_1} + \overline{p_2} + p_3) \cdot (\overline{p_1} + \overline{p_2} + \overline{p_3})$$

Minimalizacija Karnoovom mapom:

$$(p_2 + p_3) \cdot (\overline{p_2} + \overline{p_3}) \cdot (\overline{p_2} + p_3)$$

Minimalizacija alegebarskim transformacijama:

$$(p_1 + p_2 + p_3) \cdot (p_1 + \overline{p_2} + p_3) \cdot (p_1 + \overline{p_2} + \overline{p_3}) \cdot (\overline{p_1} + p_2 + p_3) \cdot (\overline{p_1} + \overline{p_2} + p_3) \cdot (\overline{p_1} + \overline{p_2} + \overline{p_3}) =$$

$$(p_2 + p_3) + (p_1 \cdot \overline{p_1}) \cdot (\overline{p_2} + p_3) + (p_1 \cdot \overline{p_1}) \cdot (\overline{p_2} + \overline{p_3}) + (p_1 \cdot \overline{p_1}) =$$

$$(p_2 + p_3) + 0 \cdot (\overline{p_2} + p_3) + 0 \cdot (\overline{p_2} + \overline{p_3}) + 0 =$$

$$\text{II Zakon distributivnosti: } (A + B) \cdot (A + C) = A + (B \cdot C)$$

Važi u aritmetici ali ne i u Bulovoj algebri