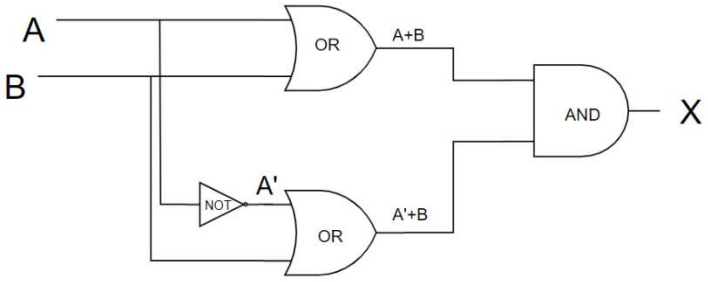
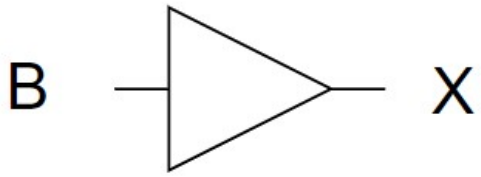
PUTU NOVENDRA KRISNA

1801020042

1. $X = (\bar{A} + B)(A + B)$
   $X = B(\bar{A} + A)$
   $X = B.1 = B$

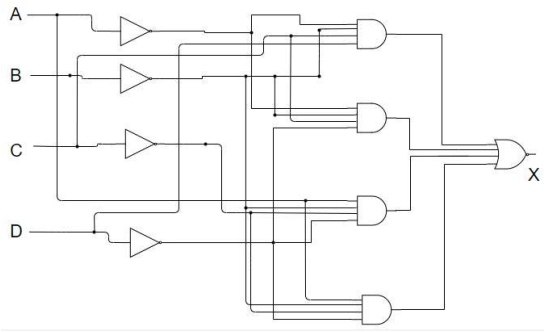


Sebelum Penyederhanaan 1

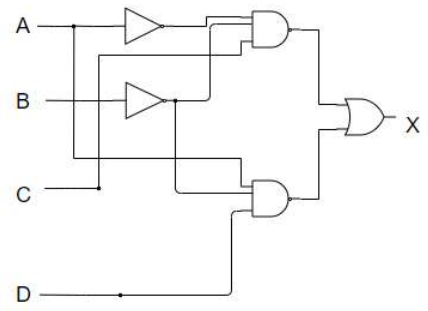


Setelah Penyederhanaan 1

2. $X = \bar{A}\bar{B}CD + \bar{A}\bar{B}C\bar{D} + A\bar{B}\bar{C}\bar{D} + A\bar{B}C\bar{D}$
   $X = \bar{B}(\bar{A}CD + \bar{A}C\bar{D} + A\bar{C}\bar{D} + AC\bar{D})$
   $X = \bar{B}\big(\bar{A}(CD + C\bar{D}) + \bar{D}(A\bar{C} + AC)\big)$
   $X = \bar{B}\left(\bar{A}\big(C(D + \bar{D})\big) + D\big(A(\bar{C} + C)\big)\right)$
   $X = \bar{B}\big(\bar{A}(C.1) + D(A.1)\big)$
   $X = \bar{B}(\bar{A}C + AD)$
   $X = \bar{A}\bar{B}C + A\bar{B}D$

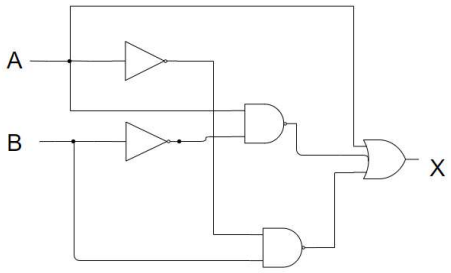


Sebelum Penyederhanaan 2

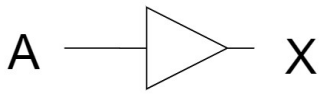


Setelah Penyederhanaan 2

3. $X = A + A\bar{B} + \bar{A}B$
   $X = A(1 + \bar{B} + B)$
   $X = A.1 = A$

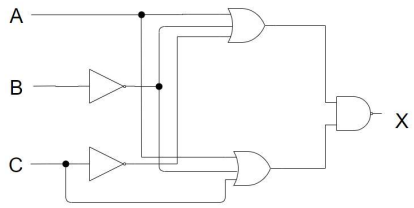


Sebelum Penyederhanaan 3

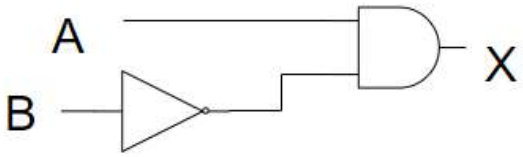


Setelah Penyederhanaan 3

4. $X = (A + \bar{B} + \bar{C})(A + \bar{B} + C)$
   $X = AA + A\bar{B} + AC + A\bar{B} + \bar{B}\bar{B} + \bar{B}C + A\bar{C} + \bar{B}\bar{C} + C\bar{C}$
   $X = A + A\bar{B} + AC + \cancel{A\bar{B}} + \bar{B} + \bar{B}C + A\bar{C} + \bar{B}\bar{C} + 0$
   $X = A + A\bar{B} + AC\ + A\bar{C} + \bar{B} + \bar{B}C + \bar{B}\bar{C} +$
   $X = A(1 + \bar{B} + C + \bar{C}) + \bar{B}(1 + C + \bar{C})$
   $X = A.1 + \bar{B}.1 = A\bar{B}$



Sebelum Penyederhanaan 4



Setelah Penyederhanaan 4

5. $X = A\bar{B} + \bar{B}C + \bar{A}C$

$X = A\bar{B}(C + \bar{C}) + \bar{B}C(A + \bar{A}) + \bar{A}C(B + \bar{B})$

$X = A\bar{B}C + A\bar{B}\bar{C} + A\bar{B}C + \bar{A}\bar{B}C + \bar{A}BC + \bar{A}\bar{B}C$

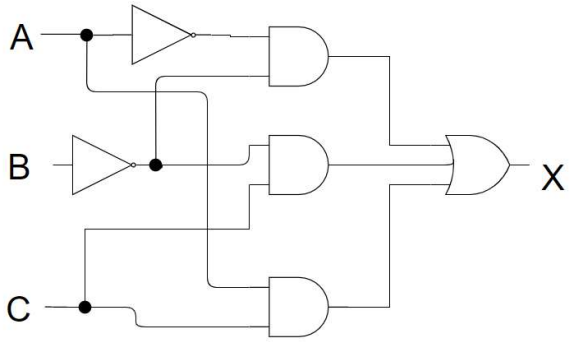
$X = A\bar{B}C + A\bar{B}\bar{C} + \cancel{A\bar{B}C} + \bar{A}\bar{B}C + \bar{A}BC + \cancel{\bar{A}\bar{B}C}$

$X = A\bar{B}C + A\bar{B}\bar{C} + \bar{A}\bar{B}C + \bar{A}BC$

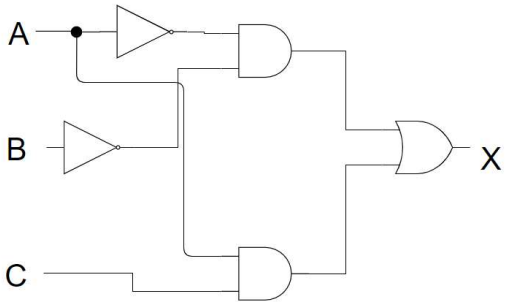
$X = A(\bar{B}C + \bar{B}\bar{C}) + \bar{A}(\bar{B}C + BC)$

$X = A\big(\ \bar{B}(C + \bar{C})\big) + \bar{A}\big(C(\bar{B} + B)\big)$

$X = A(\ \bar{B}.1) + \bar{A}(C.1) = A\bar{B} + \bar{A}C$

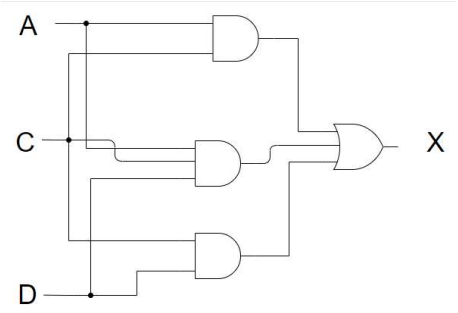


Sebelum Penyederhanaan 5

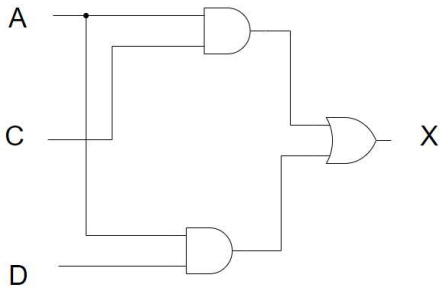


Setelah Penyederhanaan 5

6. $X = AC + ACD + AD = AC(1 + D) + AD = AC + AD$

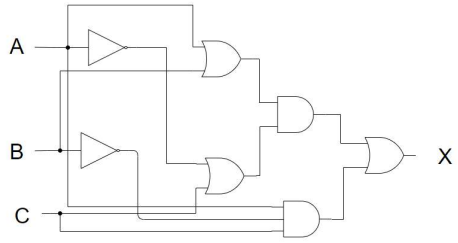


Sebelum Penyederhanaan 6

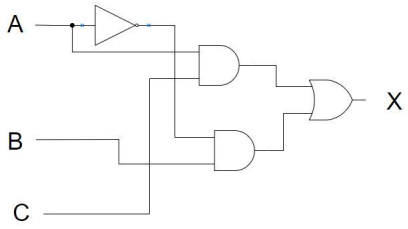


Setelah Penyederhanaan 6

7. $X = (A + B)(\bar{A} + C) + A\bar{B}C$
$X = A\bar{A} + AC + \bar{A}B + BC + A\bar{B}C$
$X = 0 + AC(B + \bar{B}) + \bar{A}B(C + \bar{C}) + BC(A + \bar{A}) + A\bar{B}C$
$X = ABC + A\bar{B}C + \bar{A}BC + \bar{A}B\bar{C} + \cancel{ABC} + \cancel{\bar{A}BC} + \cancel{A\bar{B}C}$
$X = ABC + A\bar{B}C + \bar{A}BC + \bar{A}B\bar{C} = AC(B + \bar{B}) + \bar{A}B(C + \bar{C}) = AC + \bar{A}B$



Sebelum Penyederhanaan 7



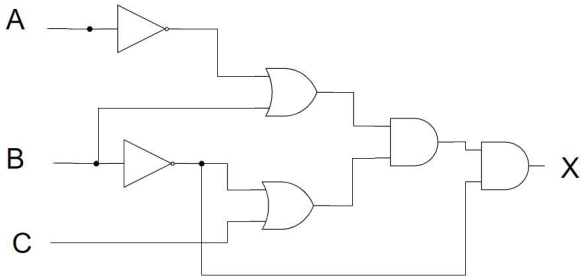
Setelah Penyederhanaan 7

8. $X = \big((\bar{A} + B)(\bar{B} + C)\big)\bar{B}$

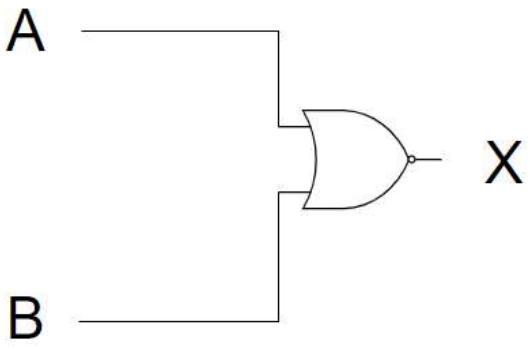
$X = (\bar{A}\bar{B} + \bar{A}C + B\bar{B} + BC)\bar{B} = (\bar{A}\bar{B} + \bar{A}C + 0 + BC)\bar{B}$

$X = \bar{A}\bar{B}\bar{B} + \bar{A}\bar{B}C + B\bar{B}C = \bar{A}\bar{B} + \bar{A}\bar{B}C + 0$

$X = \bar{A}\bar{B}(1 + C) = \bar{A}\bar{B} = \overline{A + B}$



Sebelum Penyederhanaan 8



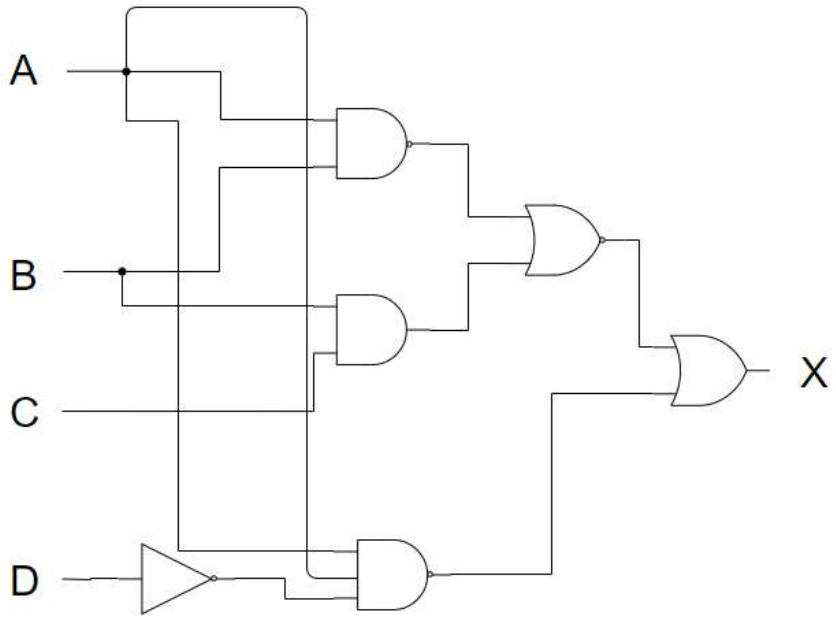
Setelah Penyederhanaan 8

9. $X = \overline{\overline{(\overline{AB}) + BC}} + \overline{(AC\bar{D})}$

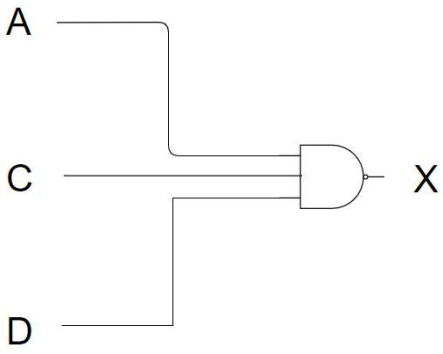
$X = \overline{(\bar{A} + \bar{B} + BC)} + \bar{A} + \bar{C} + \bar{\bar{D}} = \left(\bar{\bar{A}}.\bar{\bar{\bar{B}}}.\overline{BC}\right) + \bar{A} + \bar{C} + D = AB(\bar{B} + \bar{C}) + \bar{A} + \bar{C} + D$

$X = AB\bar{B} + AB\bar{C} + \bar{A} + \bar{C} + D = 0 + AB\bar{C} + \bar{A} + \bar{C} + D$

$X = \bar{C}(1 + BC) + \bar{A} + D = \bar{A} + \bar{C} + \bar{D} = \overline{ACD}$



Sebelum Penyederhanaan 9



Setelah Penyederhanaan 9

10. $X = \overline{(A\bar{B}\bar{C} + \bar{D})} + \overline{(A\bar{B} + B\bar{C})} = \left(\overline{A\bar{B}\bar{C}}.\overline{\bar{\bar{D}}}\right) + \left(\overline{A\bar{B}}.\overline{B\bar{C}}\right) = \left((\bar{A} + \bar{B} + C).D\right) + \left((\bar{A} + B) + (\bar{B} + C)\right)$

$X = (\bar{A}D + \bar{B}D + CD) + (\bar{A}\bar{B} + \bar{A}C + B\bar{B} + BC) = (\bar{A}D + \bar{B}D + CD) + (\bar{A}\bar{B} + \bar{A}C + 0 + BC)$

$X = (\bar{A}D + \bar{B}D + CD + \bar{A}\bar{B}) + \left(\bar{A}\bar{B}(C + \bar{C}) + \bar{A}C(B + \bar{B}) + BC(A + \bar{A})\right)$

$X = (\bar{A}D + \bar{B}D + CD + \bar{A}\bar{B}) + (\bar{A}\bar{B}C + \bar{A}\bar{B}\bar{C} + \bar{A}BC + \cancel{\bar{A}\bar{B}C} + ABC + \cancel{\bar{A}BC})$

$X = (\bar{A}D + \bar{B}D + CD + \bar{A}\bar{B}) + (\bar{A}\bar{B}C + \bar{A}\bar{B}\bar{C} + \bar{A}BC + ABC)$

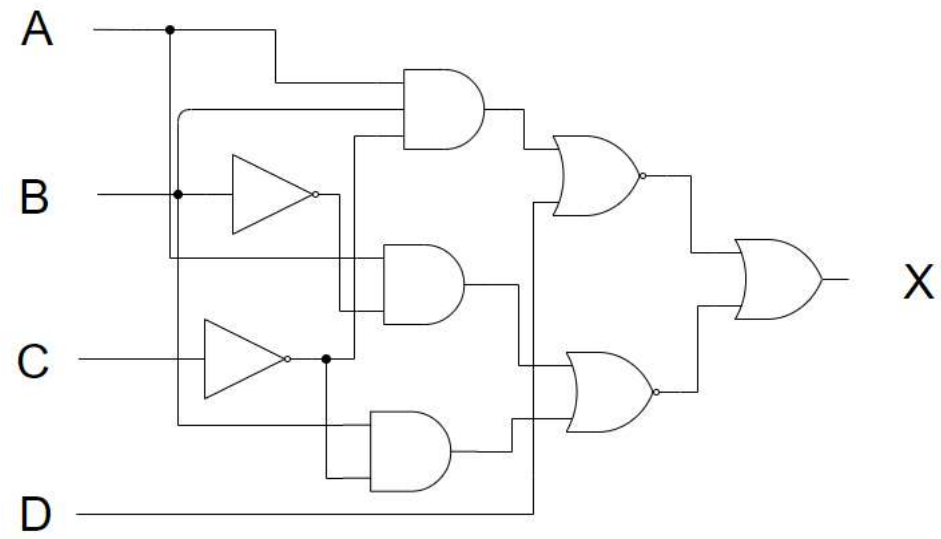
$X = (\bar{A}D + \bar{B}D + CD + \bar{A}\bar{B}) + (\bar{A}\bar{B}(C + \bar{C}) + BC(\bar{A} + A) = \bar{A}D + \bar{B}D + CD + \bar{A}\bar{B} + \cancel{\bar{A}\bar{B}} + BC$

$X = (BC + \bar{B}D + CD) + \bar{A}\bar{B} + \bar{A}\bar{B} + \bar{A}D$

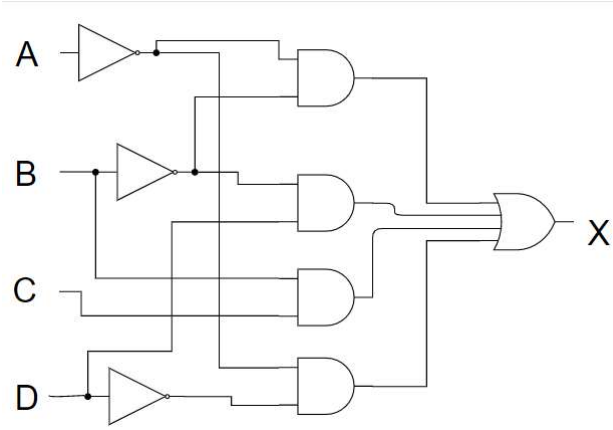
$X = \left(BC(D + \bar{D}) + \bar{B}D(C + \bar{C}) + CD(B + \bar{B})\right) + \bar{A}\bar{B} + \bar{A}D$

$X = (BCD + BC\bar{D} + \bar{B}CD + \bar{B}\bar{C}D + \cancel{BCD} + \cancel{\bar{B}CD}) + \bar{A}\bar{B} + \bar{A}\bar{D}$

$X = (BC(D + \bar{D}) + \bar{B}D(C + \bar{C}) + \bar{A}\bar{B} + \bar{A}\bar{D} = BC + \bar{B}D + \bar{A}\bar{B} + \bar{A}\bar{D}$



Sebelum Penyederhanaan 10



Setelah Penyederhanaan 10