

CLOPE

$$Profit_r(\mathbf{C}) = \frac{\sum_{i=1}^k \frac{S(C_i)}{W(C_i)^r} \times |C_i|}{\sum_{i=1}^k |C_i|}$$

- C1:
 - a: 4, b:3, c: 2 (**4 transactions: abc, abc, ab, a**)
(sol: **W=3; H=9/3=3; H/W=1**)
 - d: 3, e:3, f: 1 (**3 transactions: def, de, de**)
(sol: **W=3; H=7/3=2.33; H/W=0.77**)
- C2:
 - a: 2, b:2, c: 1, d:1 (**2 transactions: abcd, ab**)
(sol: **W=4; H=6/4=1.5; H/W=0.37**)
 - e:2, c: 2 (**2 transactions: ec, ec**)
(sol: **W=2; H=4/2=2; H/W=1**)

C1 is the best clustering considering $r=2$

$$Profit(\mathbf{C1}) = (9/3^2 * 4 + 7/3^2 * 3) / 7 = 0.90$$

$$Profit(\mathbf{C2}) = (6/4^2 * 2 + 4/2^2 * 2) / 4 = 0.16$$