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A) V = {Logan, ORORO, STARK, Parker, groot, Rocket}

$$D_1 = \{1, 1, 0, 0, 0, 0\}$$

$$D_2 = \{1, 0, 1, 1, 0, 0\}$$

$$D_3 = \{0, 1, 1, 0, 1, 1\}$$

$$D_4 = \{1, 0, 0, 0, 1, 0\}$$

$$D_5 = \{0, 0, 0, 0, 1, 1\}$$

Bag of
words

	D_1	D_2	D_3	D_4	D_5
k_1	1	1	0	1	0
k_2	1	0	1	0	0
k_3	0	1	1	0	0
k_4	0	1	0	0	0
k_5	0	0	1	1	1
k_6	0	0	1	0	1

B) NÃO, TODAS AS REPRESENTAÇÕES SÃO DISTINTAS

C) V = {Logan, Ororo, Stark, Parker, georr, Rockey}

	D_1	D_2	D_3	D_4	D_5
K_1	1	1	0	1	0
K_2	1	0	1	0	0
K_3	0	1	1	0	0
K_4	0	2	0	0	0
K_5	0	0	1	2	1
K_6	0	0	1	0	2

D) $q_1 = K_2 \text{ OR } (K_6 \text{ AND } K_5)$

 $\text{Sim}(q_1, D_1) = 1 \text{ OR } (0 \text{ AND } 0) = 1$
 $\text{Sim}(q_1, D_2) = 0 \text{ OR } (0 \text{ AND } 0) = 0$
 $\text{Sim}(q_1, D_3) = 1 \text{ OR } (1 \text{ AND } 0) = 1$
 $\text{Sim}(q_1, D_4) = 0 \text{ OR } (0 \text{ AND } 1) = 0$
 $\text{Sim}(q_1, D_5) = 0 \text{ OR } (1 \text{ AND } 1) = 1$

92: (not ok_k4 or K2)

$$\text{Sim}(q_2, D_1) = (1 \text{ OR } 0 \text{ OR } 1) \text{ AND NOT } K_6$$

$$\text{Sim}(q_2, D_2) = (1 \text{ OR } 1 \text{ OR } 0) \text{ AND NOT } 0 = 1$$

$$\text{Sim}(q_2, D_3) = (0 \text{ OR } 0 \text{ OR } 1) \text{ AND NOT } 0 = 1$$

$$\text{Sim}(q_2, D_4) = (1 \text{ OR } 0 \text{ OR } 0) \text{ AND NOT } 1 = 0$$

$$\text{Sim}(q_2, D_5) = (0 \text{ OR } 0 \text{ OR } 0) \text{ AND NOT } 1 = 0$$

e) $q_3 = (\text{DDOS or gROOT}) \text{ AND } \text{Pekken}$
 $(K_2 \text{ OR } K_5) \text{ AND } K_9$

$$\text{Sim}(q_3, D_1) = (1 \text{ OR } 0)$$

$$\text{Sim}(q_3, D_2) = (0 \text{ OR } 0) \text{ AND } 0 = 0$$

$$\text{Sim}(q_3, D_3) = (1 \text{ OR } 1) \text{ AND } 1 = 0$$

$$\text{Sim}(q_3, D_4) = (0 \text{ OR } 1) \text{ AND } 0 = 0$$

$$\text{Sim}(q_3, D_5) = (0 \text{ OR } 1) \text{ AND } 0 = 0$$

f) $q_4 = (\text{log4j} \text{ AND NOT } \text{Rocket}) \text{ OR } \text{gROOT}$

$$\text{Sim}(q_4, D_1) = (1 \text{ AND NOT } 0) \text{ OR } 0 = 1$$

$$\text{Sim}(q_4, D_2) = (1 \text{ AND NOT } 0) \text{ OR } 0 = 1$$

$$\text{Sim}(q_4, D_3) = (0 \text{ AND NOT } 1) \text{ OR } 1 = 1$$

$$\text{Sim}(q_4, D_4) = (1 \text{ AND NOT } 0) \text{ OR } 1 = 1$$

$$\text{Sim}(q_4, D_5) = (0 \text{ AND NOT } 1) \text{ OR } 1 = 1$$