# CSE427s - 7 [P] RS3
# Similarity Measures

33% (1/3)

✓ 1. Just by looking at the data in the example (you don't have to do any computation), which user do you expect to have the highest similarity with ME?

- (A) A
- (B) B
- (C) C
- (D) D

| | HP1 | HP2 | HP3 | TW | SW1 | SW2 | SW3 | TH |
|---|---|---|---|---|---|---|---|---|
| A | 4 | | | 5 | 1 | | 1 | |
| B | 5 | 5 | 4 | | | 1 | 1 | |
| C | | | 1 | 2 | 4 | 5 | | 5 |
| D | | 3 | | | | | 3 | 3 |
| ME | 2 | | 1 | | 5 | | 4 | 4 |

✗ 2. Just by looking at the data in the example (you don't have to do any computation), which user do you expect to have the **lowest** similarity with ME?

- (A) A
- (B) B
- (C) C
- (D) D

| | HP1 | HP2 | HP3 | TW | SW1 | SW2 | SW3 | TH |
|---|---|---|---|---|---|---|---|---|
| A | 4 | | | 5 | 1 | | 1 | |
| B | 5 | 5 | 4 | | | 1 | 1 | |
| C | | | 1 | 2 | 4 | 5 | | 5 |
| D | | 3 | | | | | 3 | 3 |
| ME | 2 | | 1 | | 5 | | 4 | 4 |

⊘ 3. Give the data representation used in the Jaccard similarity measure for user B and ME.

B=1,2,3,6,7
ME=1,3,5,7,8

| | HP1 | HP2 | HP3 | TW | SW1 | SW2 | SW3 | TH |
|---|---|---|---|---|---|---|---|---|
| A | 4 | | | 5 | 1 | | 1 | |
| B | 5 | 5 | 4 | | | 1 | 1 | |
| C | | | 1 | 2 | 4 | 5 | | 5 |
| D | | 3 | | | | | 3 | 3 |
| ME | 2 | | 1 | | 5 | | 4 | 4 |

⊘ 4. Compute the Jaccard similarity between **J(B, ME)**.

3/(5+5-3)=0.43

| | HP1 | HP2 | HP3 | TW | SW1 | SW2 | SW3 | TH |
|---|---|---|---|---|---|---|---|---|
| A | 4 | | | 5 | 1 | | 1 | |
| B | 5 | 5 | 4 | | | 1 | 1 | |
| C | | | 1 | 2 | 4 | 5 | | 5 |
| D | | 3 | | | | | 3 | 3 |
| ME | 2 | | 1 | | 5 | | 4 | 4 |

⊘ 5. How about cosine? Give the **data representation** in order to compute Cos(A,ME).

| | HP1 | HP2 | HP3 | TW | SW1 | SW2 | SW3 | TH |
|---|---|---|---|---|---|---|---|---|
| A | 4 | | | 5 | 1 | | 1 | |
| B | 5 | 5 | 4 | | | 1 | 1 | |
| C | | | 1 | 2 | 4 | 5 | | 5 |
| D | | 3 | | | | | 3 | 3 |
| ME | 2 | | 1 | | 5 | | 4 | 4 |

6. Compute Cos(A,ME).

| | HP1 | HP2 | HP3 | TW | SW1 | SW2 | SW3 | TH |
|---|---|---|---|---|---|---|---|---|
| A | 4 | | | 5 | 1 | | 1 | |
| B | 5 | 5 | 4 | | | 1 | 1 | |
| C | | | 1 | 2 | 4 | 5 | | 5 |
| D | | 3 | | | | | 3 | 3 |
| ME | 2 | | 1 | | 5 | | 4 | 4 |

7. Compute P(B,ME) and P(C,ME).

| | HP1 | HP2 | HP3 | TW | SW1 | SW2 | SW3 | TH |
|---|---|---|---|---|---|---|---|---|
| A | 4 | | | 5 | 1 | | 1 | |
| B | 5 | 5 | 4 | | | 1 | 1 | |
| C | | | 1 | 2 | 4 | 5 | | 5 |
| D | | 3 | | | | | 3 | 3 |
| ME | 2 | | 1 | | 5 | | 4 | 4 |

8. Which similarity measure models our expectations best?

(A) Jaccard

(B) Cosine

(C) Pearson

(D) None really.