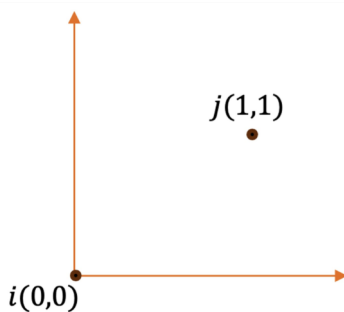


CS 506 Lab 2 Questions

February 2026

Problems

1. What is the Euclidean Distance between i and j ?



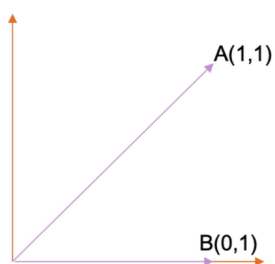
- (a) $\sqrt{2}$
 - (b) 2
 - (c) 4
 - (d) $\frac{\sqrt{2}}{2}$
2. What is the manhattan distance between i and j (using coordinates from above)?
 - (a) $\sqrt{2}$
 - (b) 2
 - (c) 4
 - (d) $\frac{\sqrt{2}}{2}$
 3. What is the Jaccard similarity between image 1 and image 2?
 - (a) $\frac{1}{4}$
 - (b) $\frac{1}{2}$

	p_1	p_2	p_3	p_4
Image 1	1	1	0	1
Image 2	0	1	1	0

(c) 1

(d) 0

4. What is the cosine similarity between A and B?



Hint: $\cos(\theta) = \frac{A \cdot B}{|A||B|}$

(a) $\frac{\sqrt{2}}{2}$

(b) $\frac{\pi}{4}$

(c) 1

(d) -1

5. What is the jaccard similarity between user 1 and user 0?

	The Matrix	Arrival	Dune	Star Wars	Iron Man
User 1	1	0	0	1	1
User 2	0	1	0	1	1

(a) $\frac{1}{2}$

(b) $\frac{3}{4}$

(c) 1

(d) 0

Solutions

1. (a) $\sqrt{2}$

2. (b) 2

3. (a) $\frac{1}{4}$

4. (a) $\frac{\sqrt{2}}{2}$

5. (a) $\frac{1}{2}$