



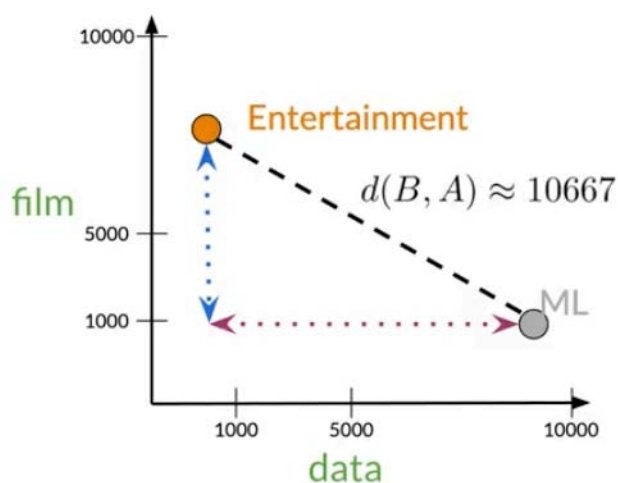
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# Euclidian Distance

Let us assume that you want to compute the distance between two points:  $A, B$ . To do so, you can use the euclidean distance defined as

$$d(B, A) = \sqrt{((B_1 - A_1)^2 + (B_2 - A_2)^2)}$$

## Euclidean distance



Corpus A: (500,7000)

Corpus B: (9320,1000)

$$d(B, A) = \sqrt{(B_1 - A_1)^2 + (B_2 - A_2)^2}$$

$$c^2 = a^2 + b^2$$

$$d(B, A) = \sqrt{(8820)^2 + (-6000)^2}$$

You can generalize finding the distance between the two points ( $A, B$ ) to the distance between an  $n$  dimensional vector as follows:

$$d(\vec{v}, \vec{w}) = \sqrt{\sum_{i=1}^n (v_i - w_i)^2}$$

Here is an example where I calculate the distance between 2 vectors ( $n = 3$ ).

