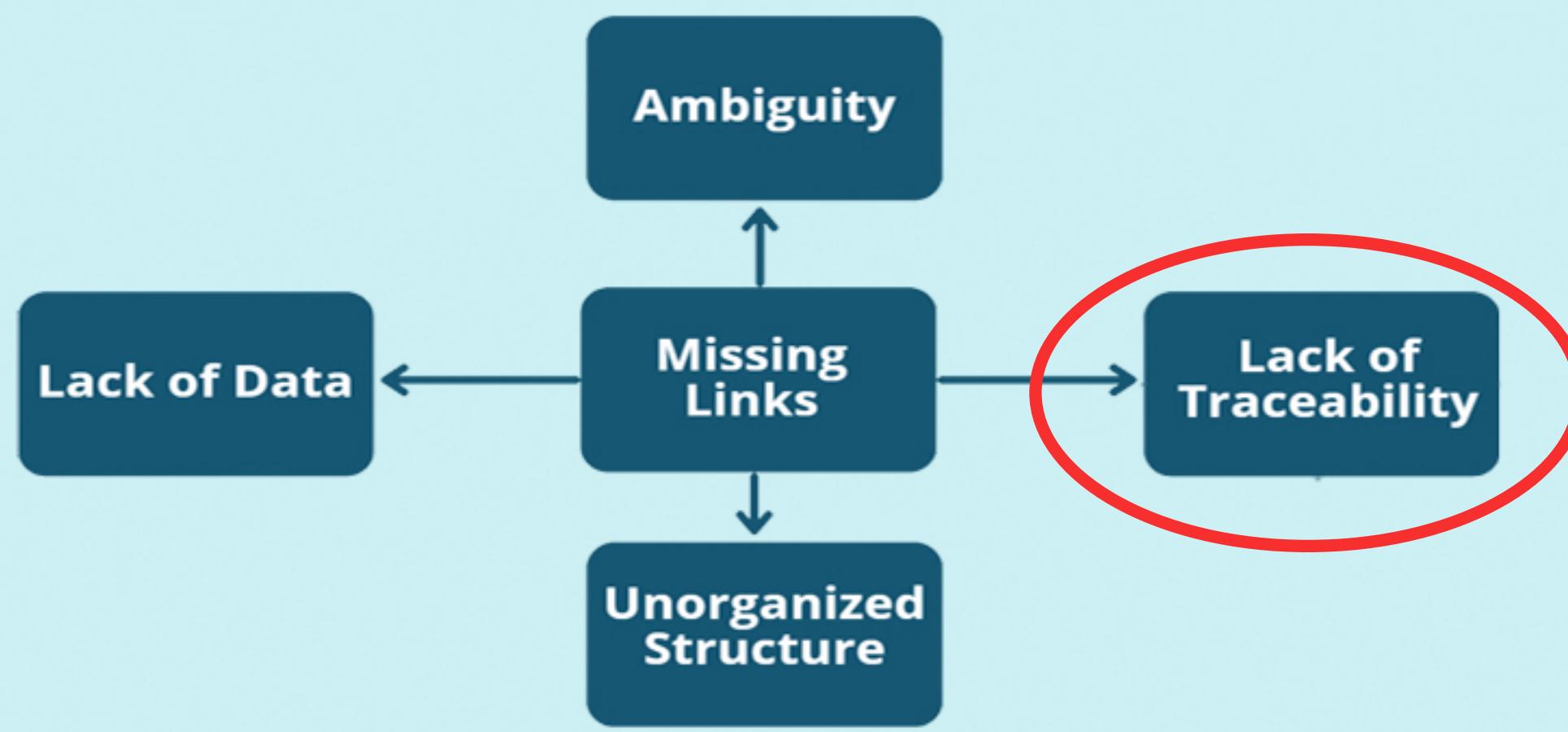




## Motivation



The more **missing links** there are,  
the lower the **traceability** is.

Missing links prevent software analytics  
tools from working efficiently.

## Survey

22 Developers from 9 companies  
rated our initial design...



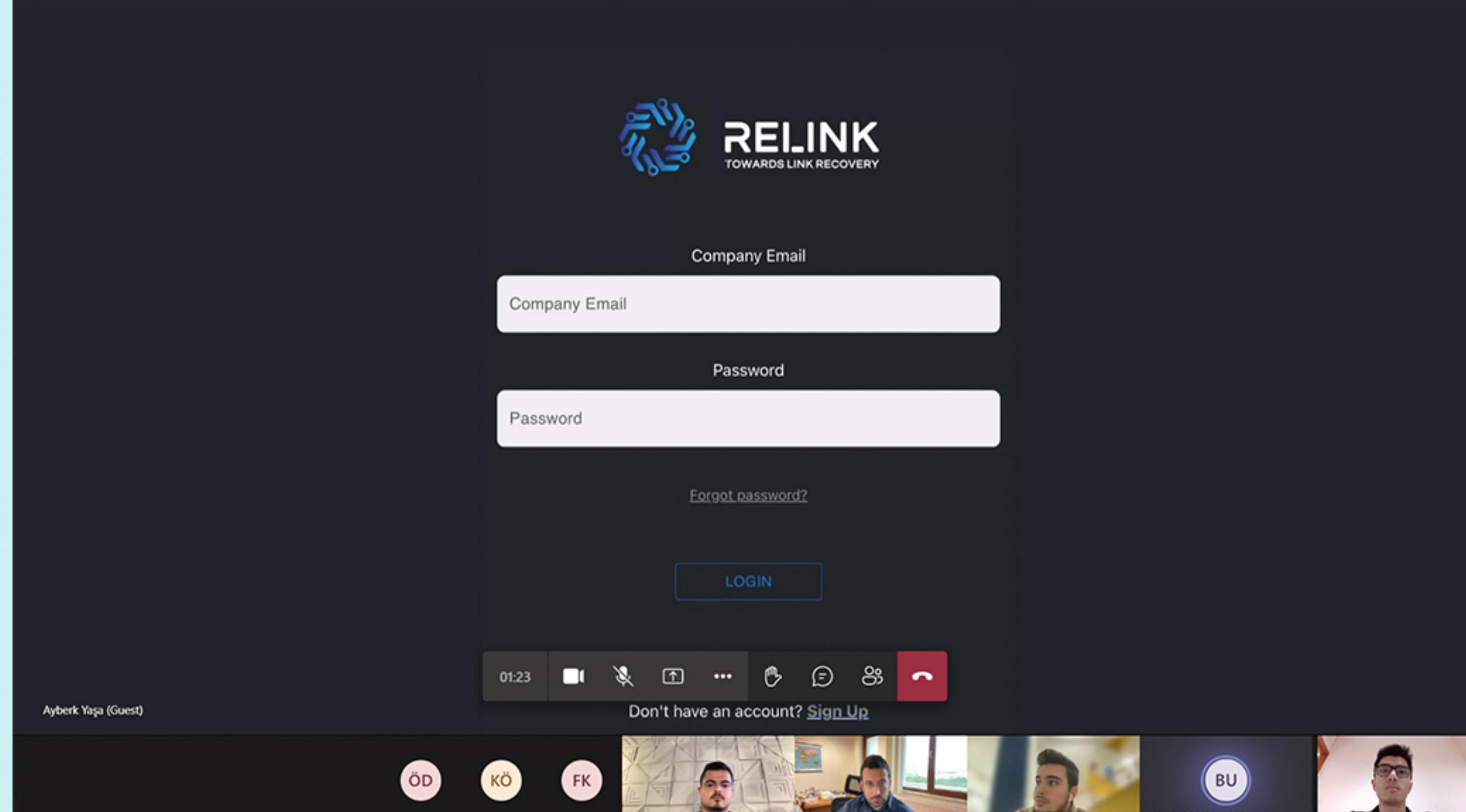
amazon.com



**4.58 / 5.00**

"It looks like a very useful tool  
and many projects need such a tool."  
~ Ural Sezer (Senior SWE @CoGC)

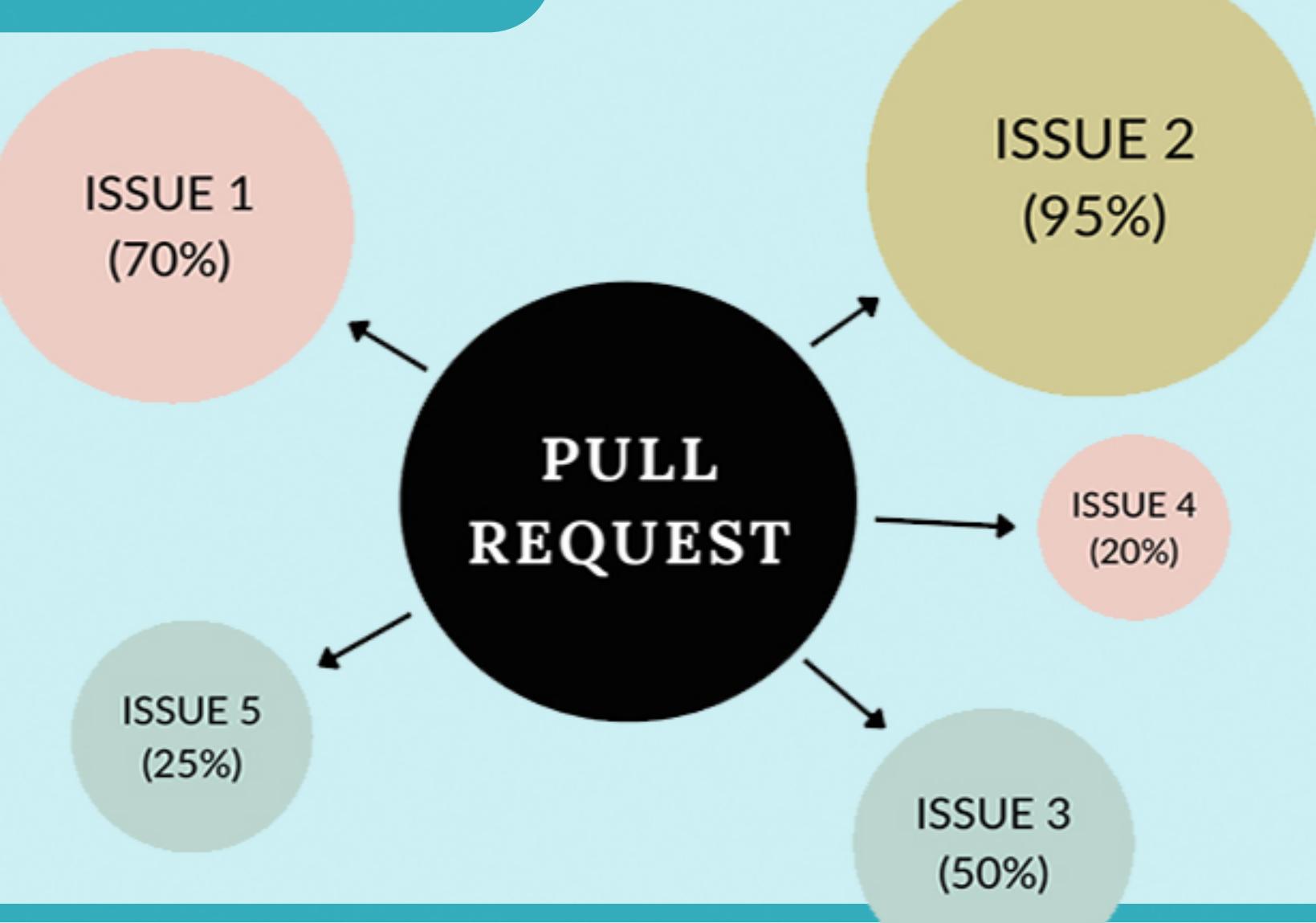
**Arçelik** is currently using  
ReLink on their "Connecta UI" project.



Baykal Uçar (Head of Engineering @Arçelik)  
gave monthly feedbacks and improved ReLink's  
usability for a big company in the industry.

## Aim

ReLink's ML model calculates  
the similarities between  
unlinked PRs and issues, and  
provides **possible links** with  
**confidence scores** (0-100).



## ML Algorithms

Cosine similarity on **word** embeddings,  
Jaccard index for **date** overlap.

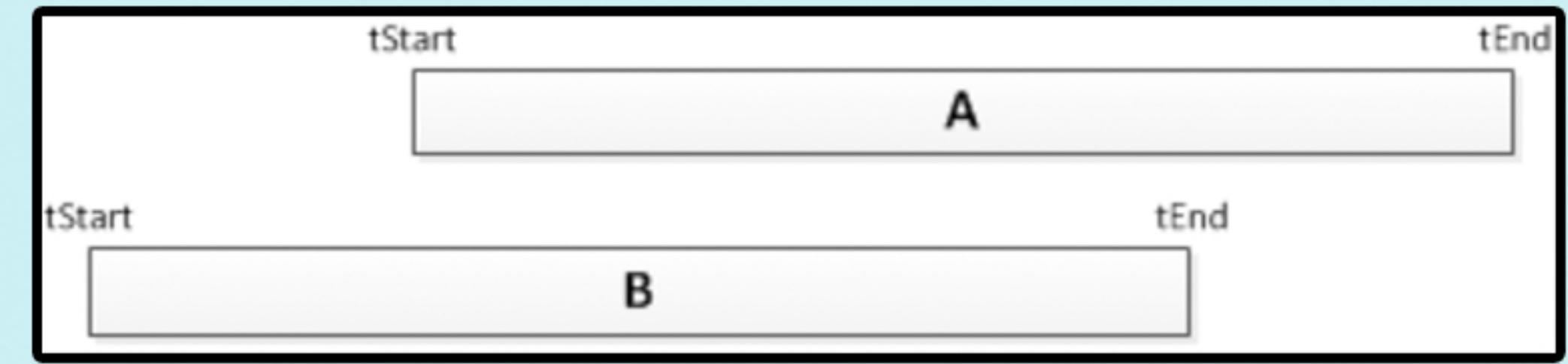
### Cosine similarity\*:

$$\text{similarity} = \cos(\theta) = \frac{\mathbf{A} \cdot \mathbf{B}}{\|\mathbf{A}\| \|\mathbf{B}\|} = \frac{\sum_{i=1}^n A_i B_i}{\sqrt{\sum_{i=1}^n A_i^2} \sqrt{\sum_{i=1}^n B_i^2}},$$

### Jaccard similarity\*:

$$J(A, B) = \frac{|A \cap B|}{|A \cup B|}$$

### Overlapping time\*:



\*A is a PR, B is an issue.

Ayberk Yaşa (Guest)

Baykal Mehmet Uçar

BÜ

Eray Tüzün (Guest)

BU

Baykal Mehmet Uçar

BU

Eray Tüzün (Guest)

BU