

SEARCH SUGGESTIONS – THE UNDERESTIMATED KILLER FEATURE OF YOUR ONLINE SHOP

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About OTTO



Suchbegriff / Artikelnr. eingeben



Inspiration . Damen . Herren . Kinder . Wäsche/Bademode . Sport . Schuhe . Große Größen
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UNSER TIPPI!
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Human PlayStation 4
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PLAYSTATION 4
PlayStation 4 (PS4) Pro
1TB
ab € 399,99



PLAYSTATION 4
PlayStation 4 (PS4) 500GB
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PLAYSTATION 4
God of War PlayStation 4
UVP € 64,74
€ 43,99



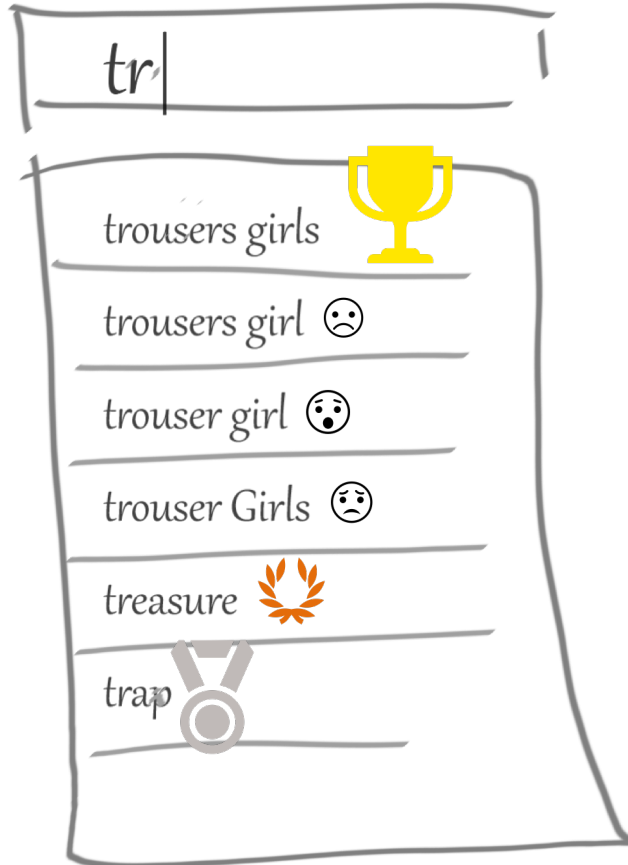
PLAYSTA
PlayStation 4 (2
Contr
ab € 35

Facts and figures about OTTO*

Founded	August 17th, 1949
No. of employees	4.500
Revenue in 2017/18 FY	2.956 billion Euros
No. of orders on otto.de	up to 10 per second
Visits on otto.de per day	on average 1.9 million

STARTING CONDITION:
BUILD WHEN CORE

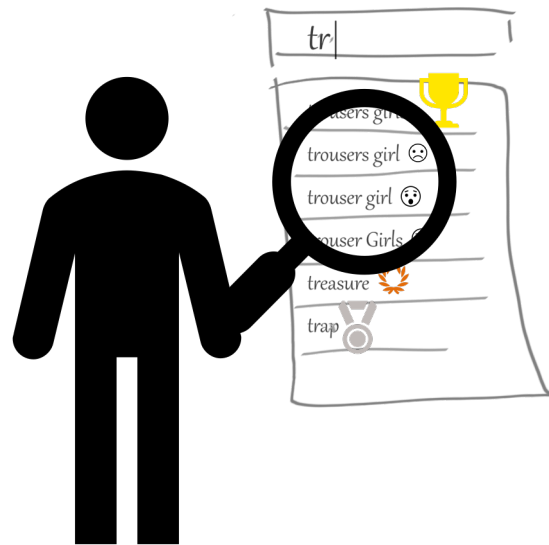
Observation: Some suggestions perform very well. Others don't.



ASSESSMENT OF POTENTIAL

- What is the difference between high and low performing suggestions?
- Can we categorize those differences?
- Which differences are the ones that have the biggest effect on the performance of our suggestion?
- How big is the potential if we make some changes to our suggestions according to the differences we observed?

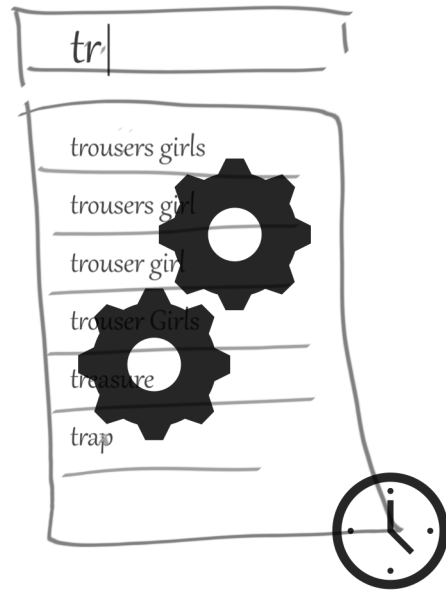
Assumption: If we work on the main differences we observed, we can increase the relevance of our suggestions.



MAIN DIFFERENCES WE OBSERVED

1. Some suggestions just seem wrong
2. Some suggestions are very similar to others
3. The position of a suggestion has an effect on how often it is used
4. Suggestions change their relevance quite frequently

Goal: Implementing an automated mechanism for good performing, frequently and continuously delivered suggestions.



ITERATIVE PROCESS

1. Discovering and implementing fitting solutions for the main differences we observed
2. Testing the new version of our search suggest (containing those solutions) against the old version
3. Observing new potentials to increase the relevance of our suggestions based on the experiment

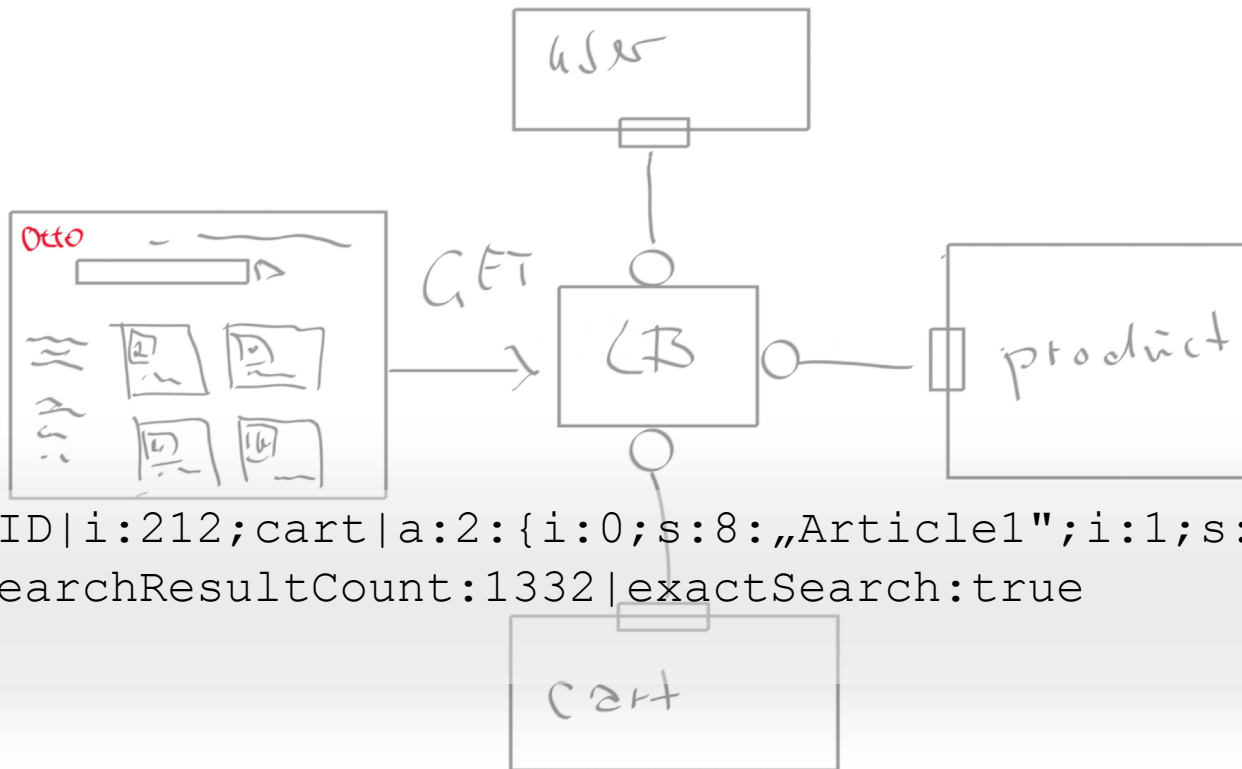
ITERATION 1: ENSURE CORRECT SPELLINGS

A good source for correct spellings is our own product data

OTTO

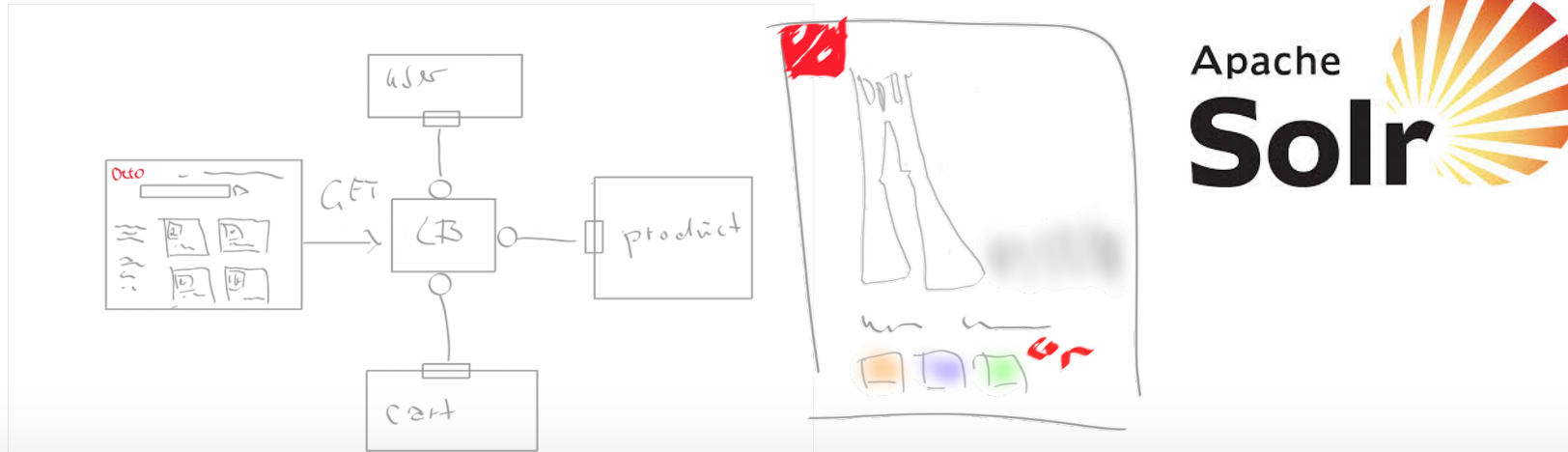


One action of the user triggers multiple events in the shop



```
UserID|i:212;cart|a:2:{i:0;s:8:"Article1";i:1;s:8:"Article2"}|search:trousers|searchResultCount:1332|exactSearch:true
```

Combining both sources for spell corrected searches



```
UserID|i:212;cart|a:2:{i:0;s:8:„Article1“;i:1;s:8:„Article2“;}|search:trousers|searchResultCount:1332|exactSearch:true
```

ITERATION 1: REMOVAGE OF DUPLICATES



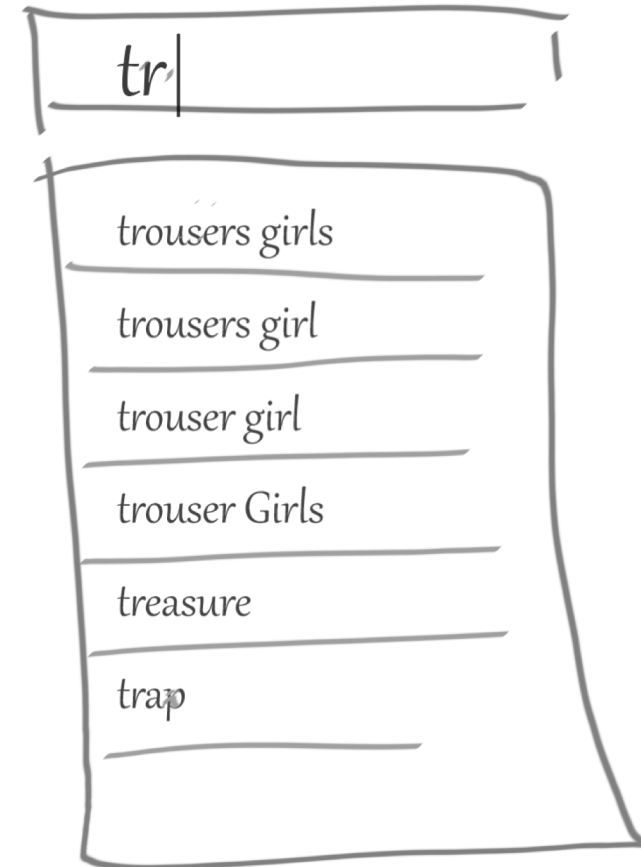
A hand-drawn list of words starting with 'tr', enclosed in a blue rectangular border. The words are listed on separate lines, with the first line starting with 'tr|' and a vertical bar. The words are: trousers girls, trousers girl, trouser girl, trouser Girls, treasure, trap, and an empty line at the bottom.

- tr|
- trousers girls
- trousers girl
- trouser girl
- trouser Girls
- treasure
- trap
-

Calculating fingerprints can be easily derived by standard lucene tools

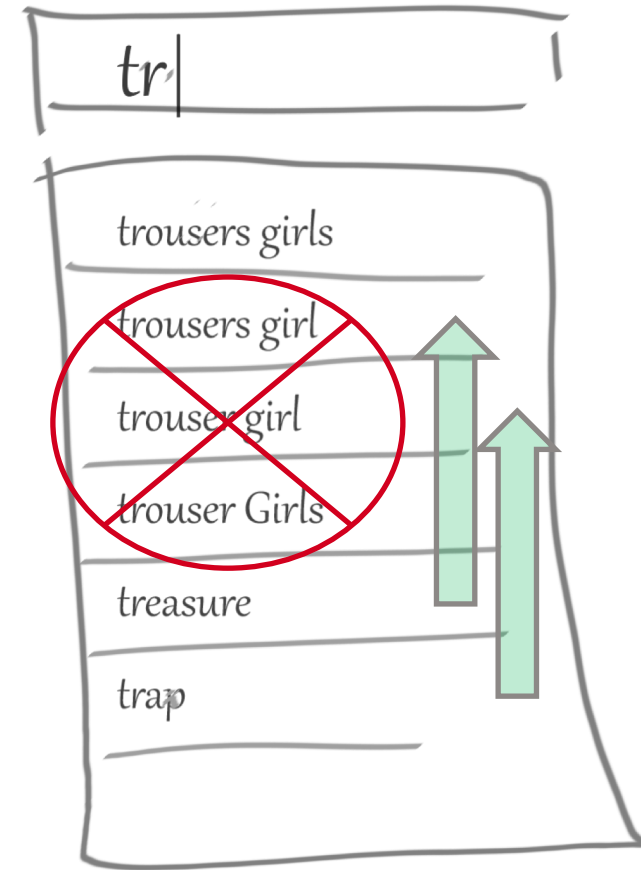
Trousers for girls
Trousers for girls
trousers for girls
trousers girls
trouser girl
girl trouser

tokenize
lowercase
stopwords
stemming
sort



Use the fingerprint to aggregate all suggestions for one fingerprint.

name: girl trousers
suggestions: {
 {trousers for girls, 130},
 {girl trousers, 100},
 {trousers girls, 200},
 {trouser girl, 50},
 {trousers girl, 50}



➤ Fingerprinting will give you more variety in your suggestions!

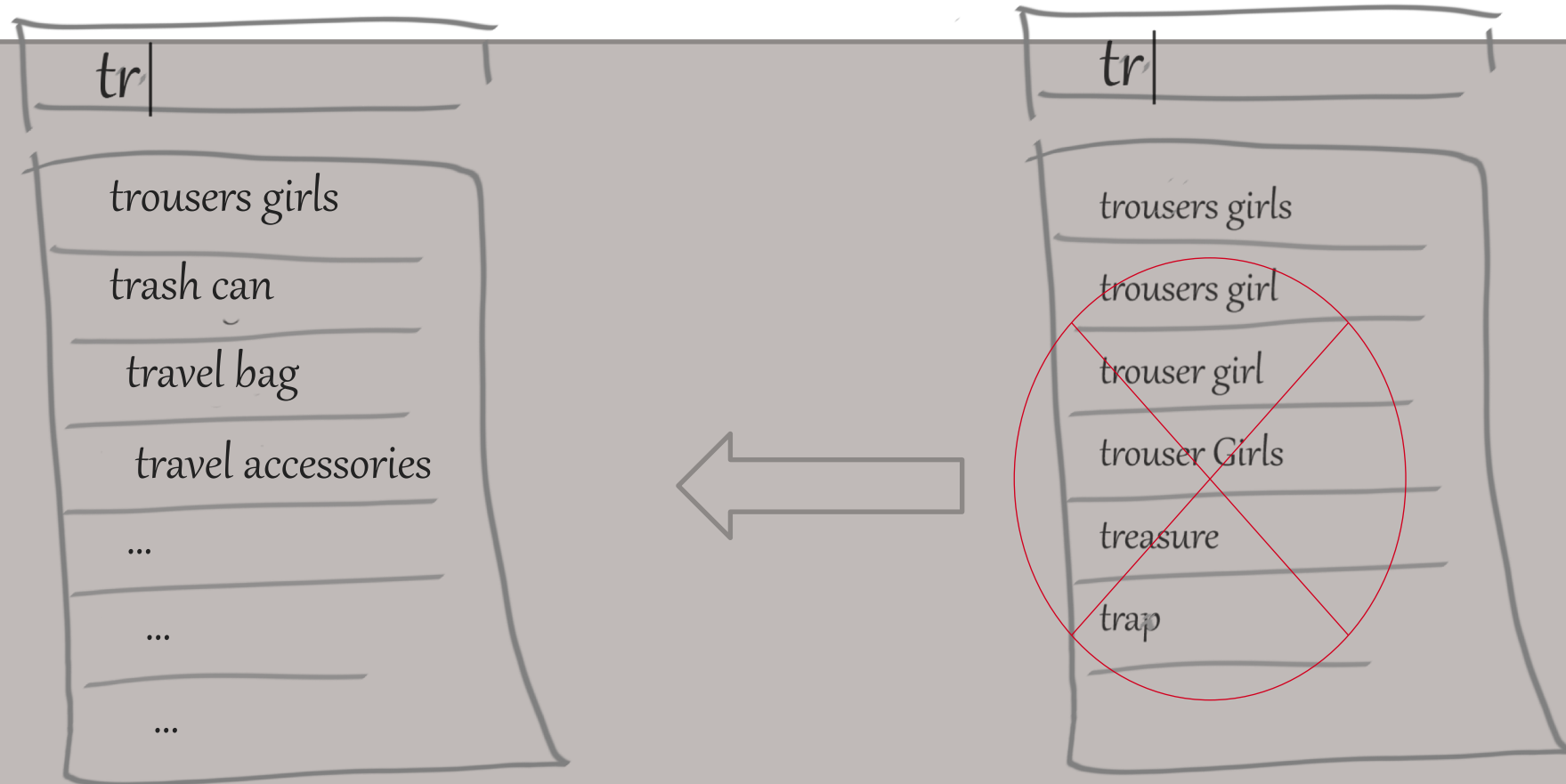
ITERATION 1: DELIVERING FREQUENT SUGGESTIONS

Calculate search frequency of the words from the clickstream as a relevancy indicator



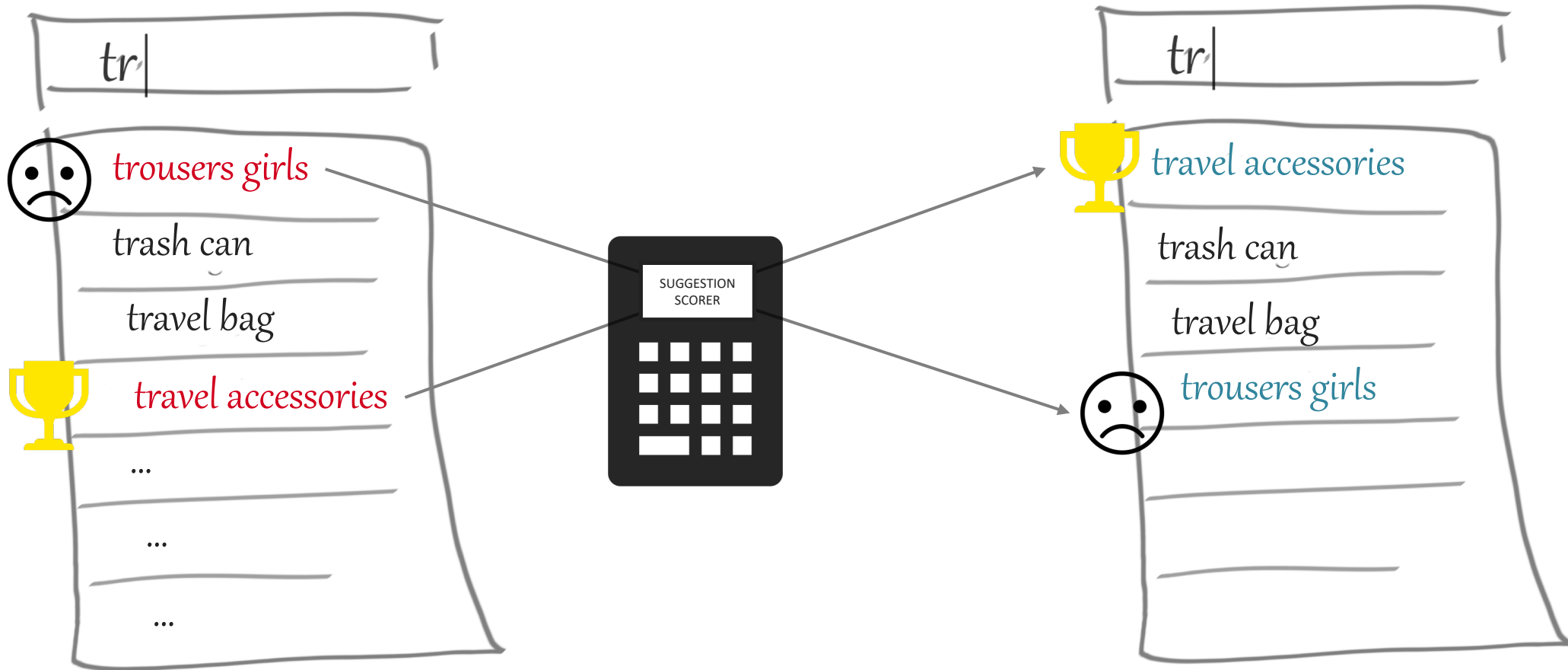
```
UserID|i:212;cart|a:2:{i:0;s:8:„Article1";i:1;s:8:"Article2";}|search:trousers|searchResultCount:1332|exactSearch:true
```


Sorting suggestions by search frequency meets your user expectations

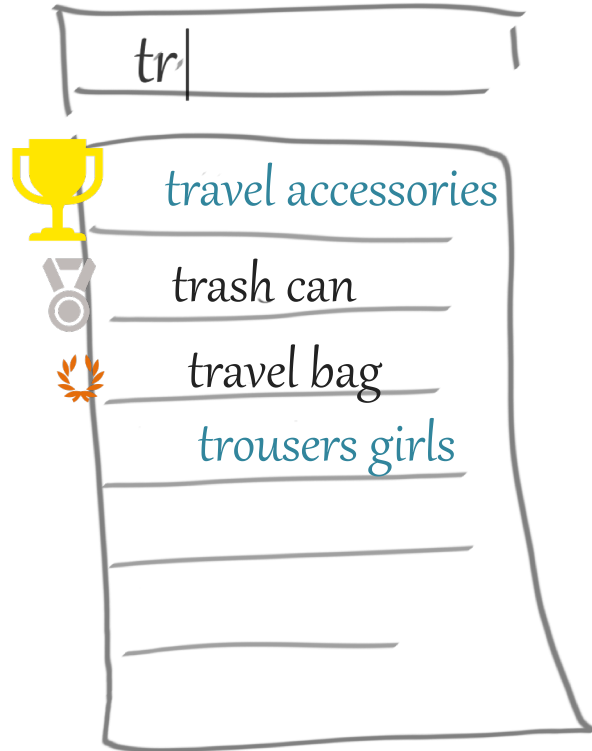


ITERATION 2: USING KPI'S
LIKE „ADD TO BASKET“,
„ORDER VALUE“ AND „CLICK
THROUGH RATE“

Better placement of suggestions by taking business KPI's into account



Observation: Works just fine! But there is even more potential.



TEST RESULTS & OBSERVATIONS



The features we implemented are absolutely worth it!



There is even more potential if we tune the parameters we use for scoring our suggestions



The method we used for scoring our suggestions can be applied to other usecases

FUTURE PROSPECT:
NOT THERE YET.

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We are hiring 😊