The structure of the Google search Engine

By Mohamed Ali

Pre Google

- Human Maintained Indices 
  - Subjective
  - Expensive
  - Cannot cover esoteric topics
- Automated Search Engines
  - Relies chiefly on keyword matching
  - Can be misled

How bad Is keyword matching

In 1997, Only one of the top four commercial search engines finds itself.

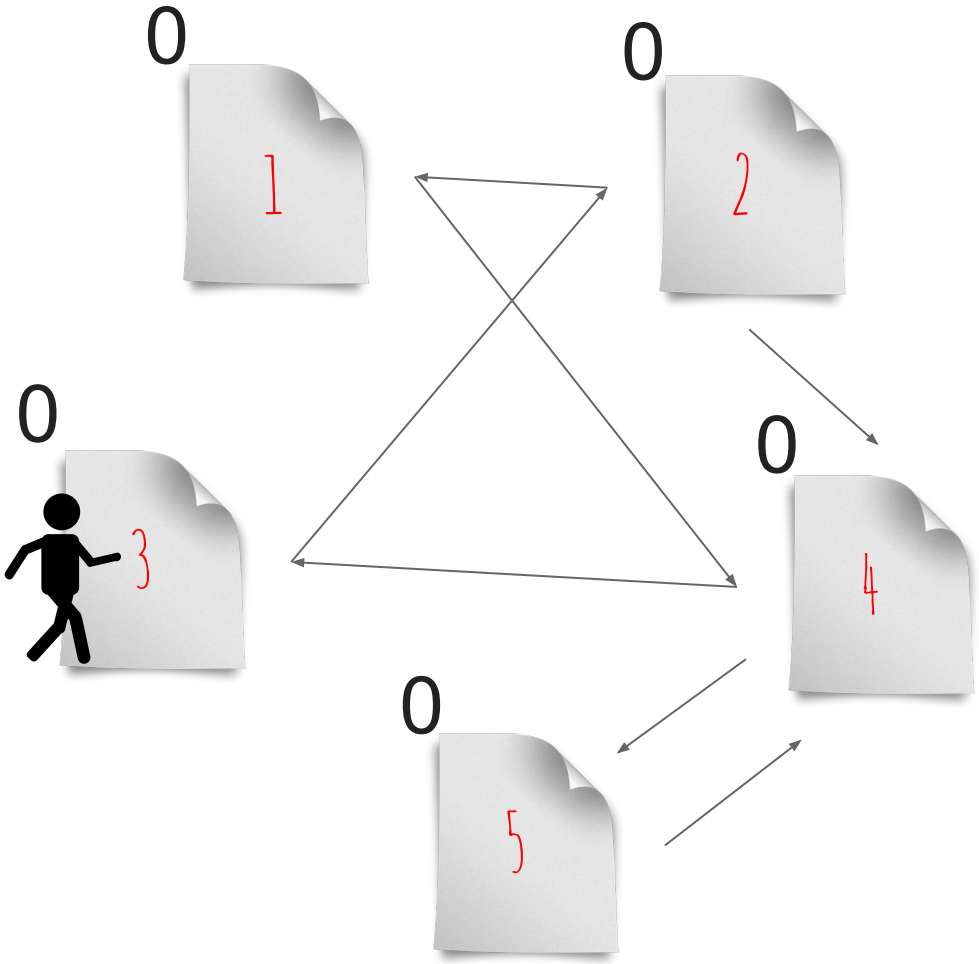
Introducing Google

System Features

- Making use of the link structure
  - Ordering the web
- Using anchor text
  - Sometimes more descriptive than the website’s title
  - Allows for reaching non-text pages

Crawling and indexing

- The Random Surfer Model (PageRank)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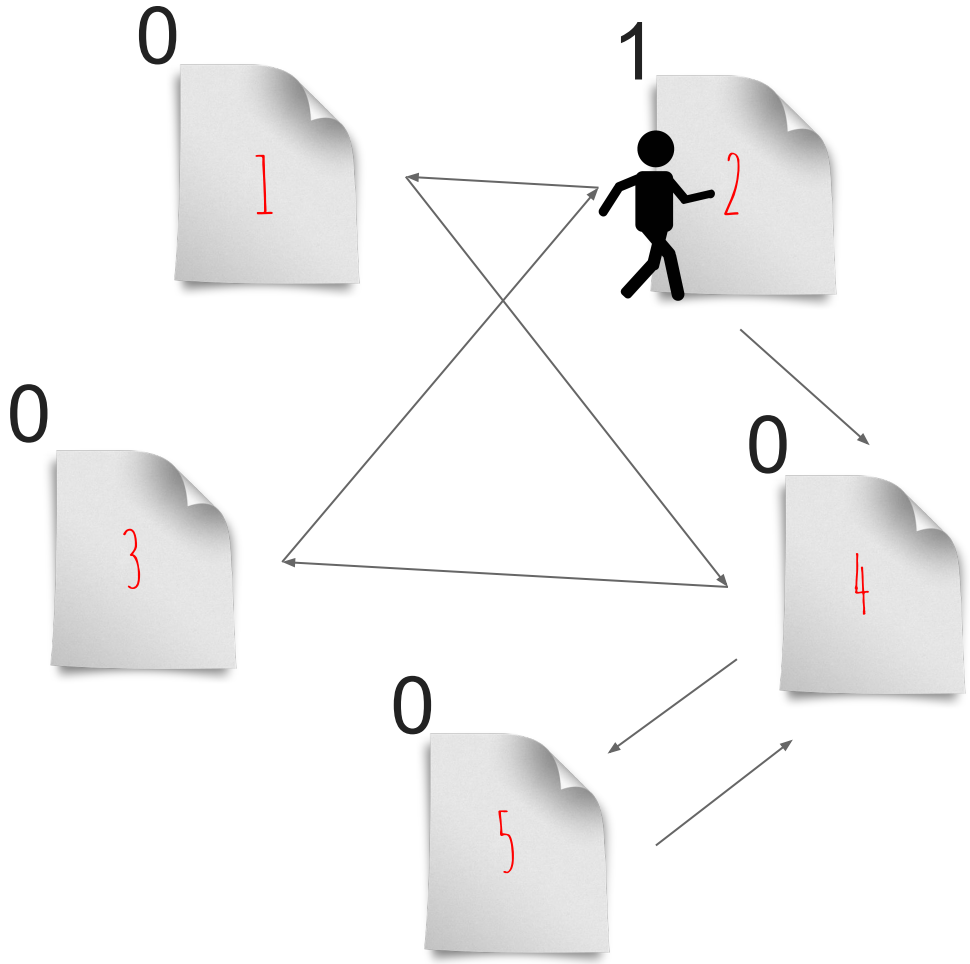
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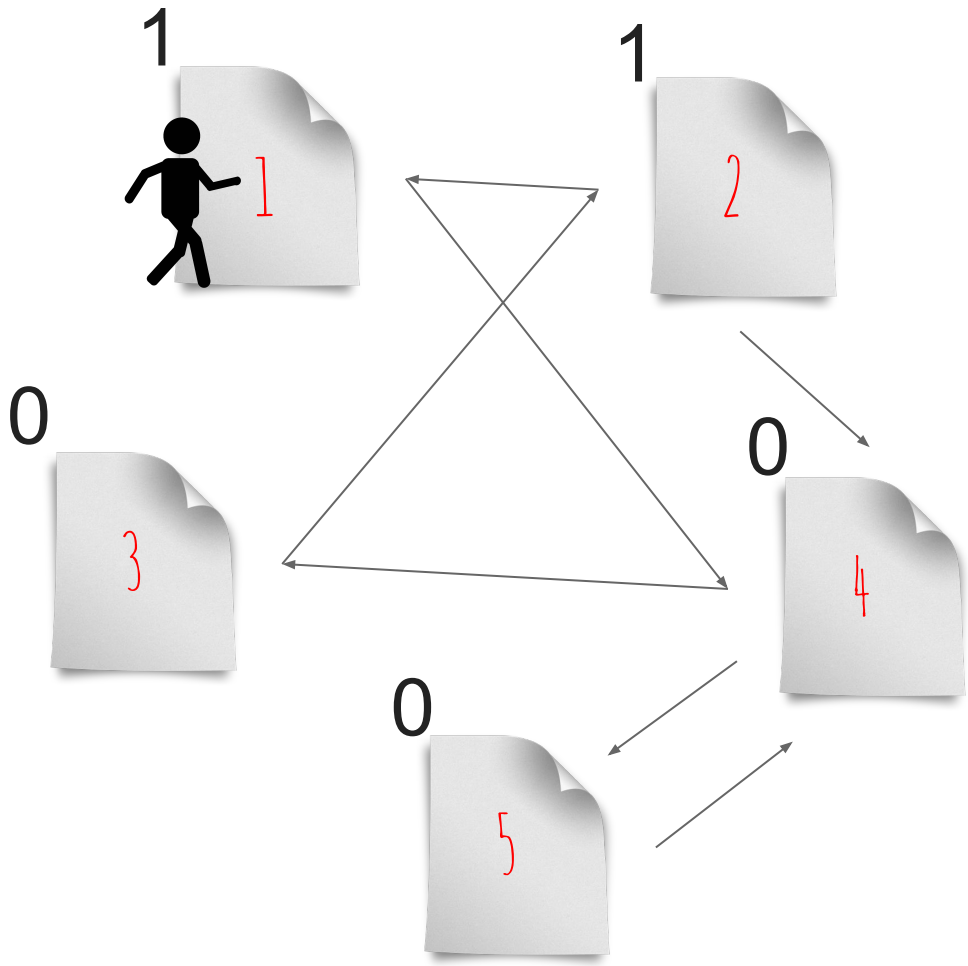
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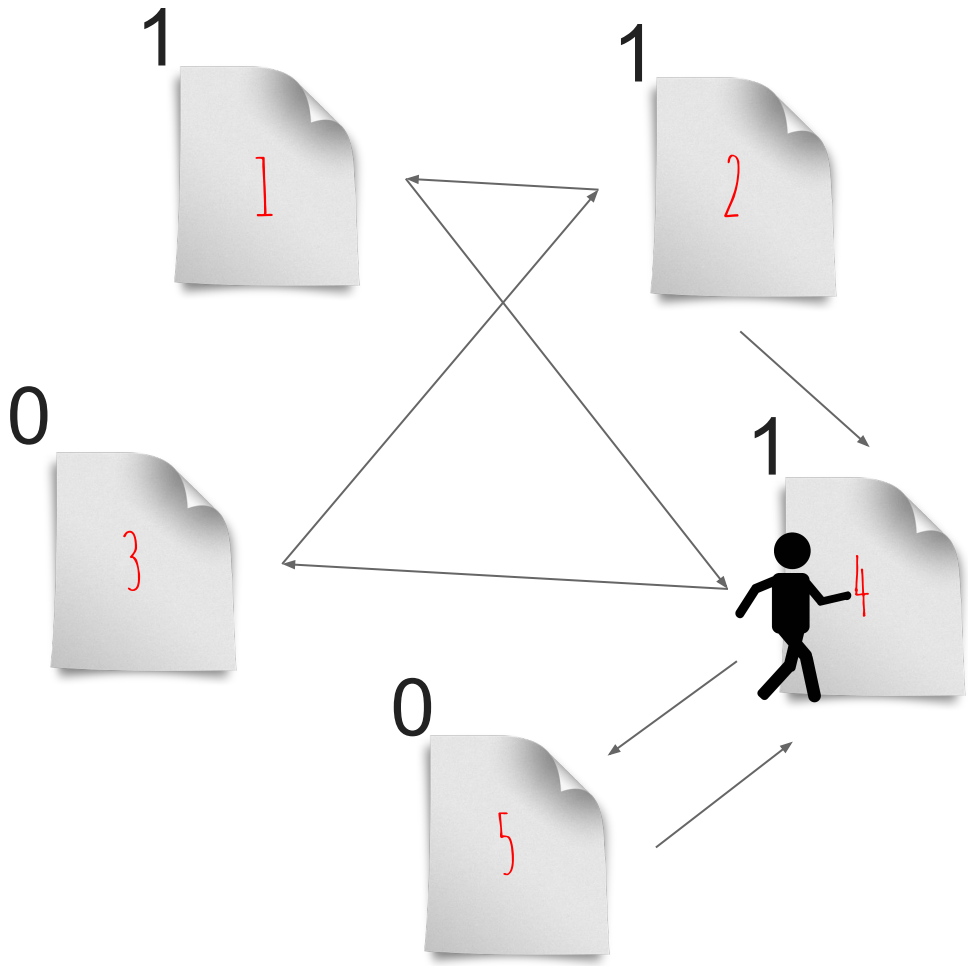
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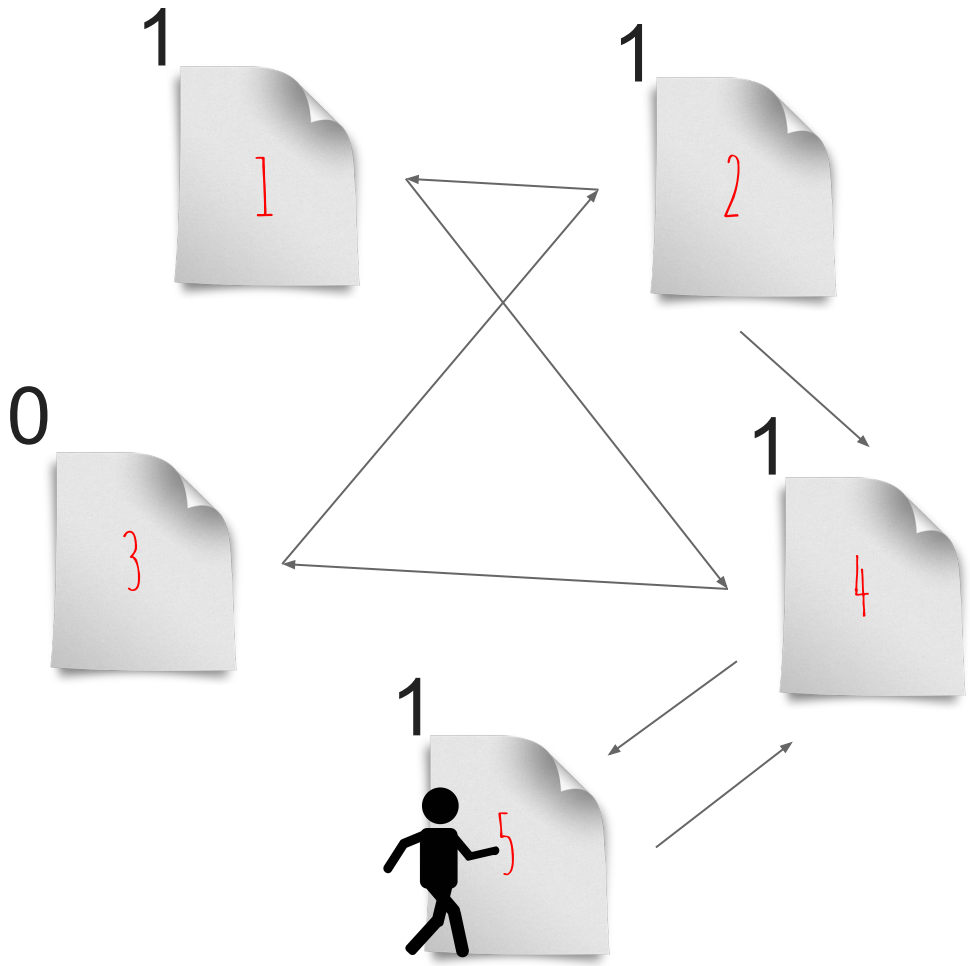
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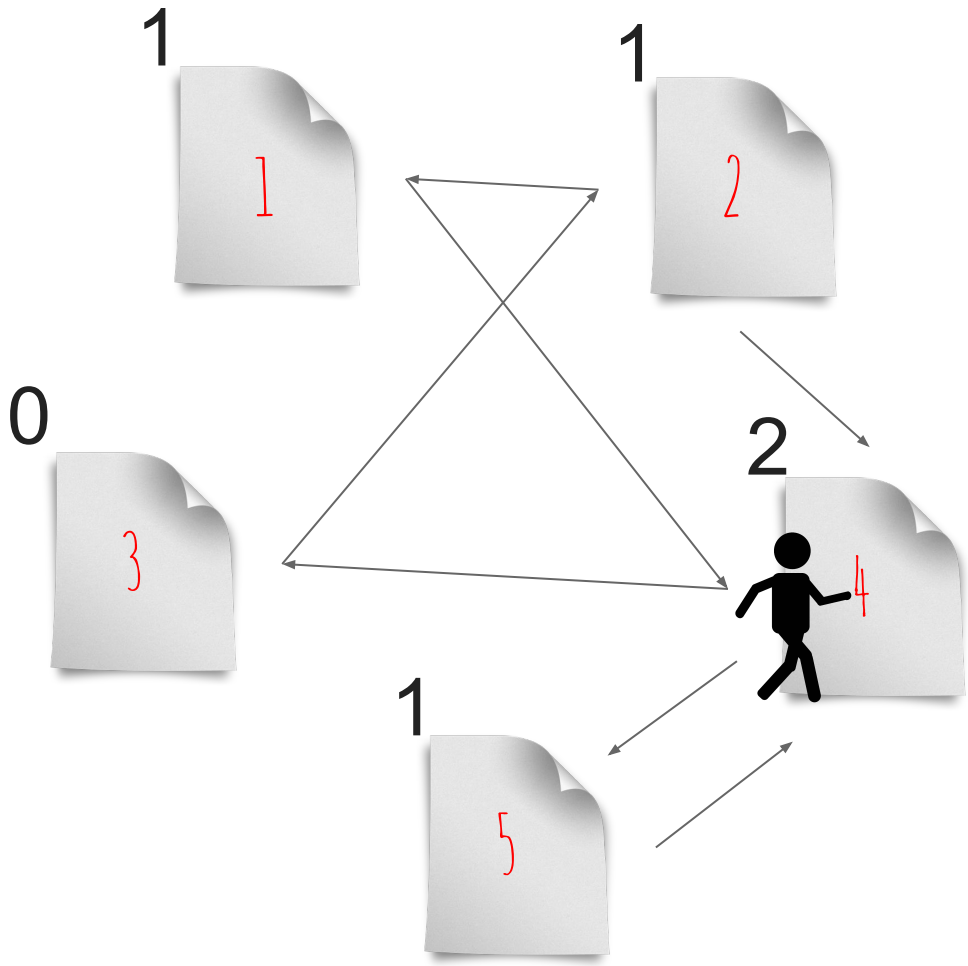
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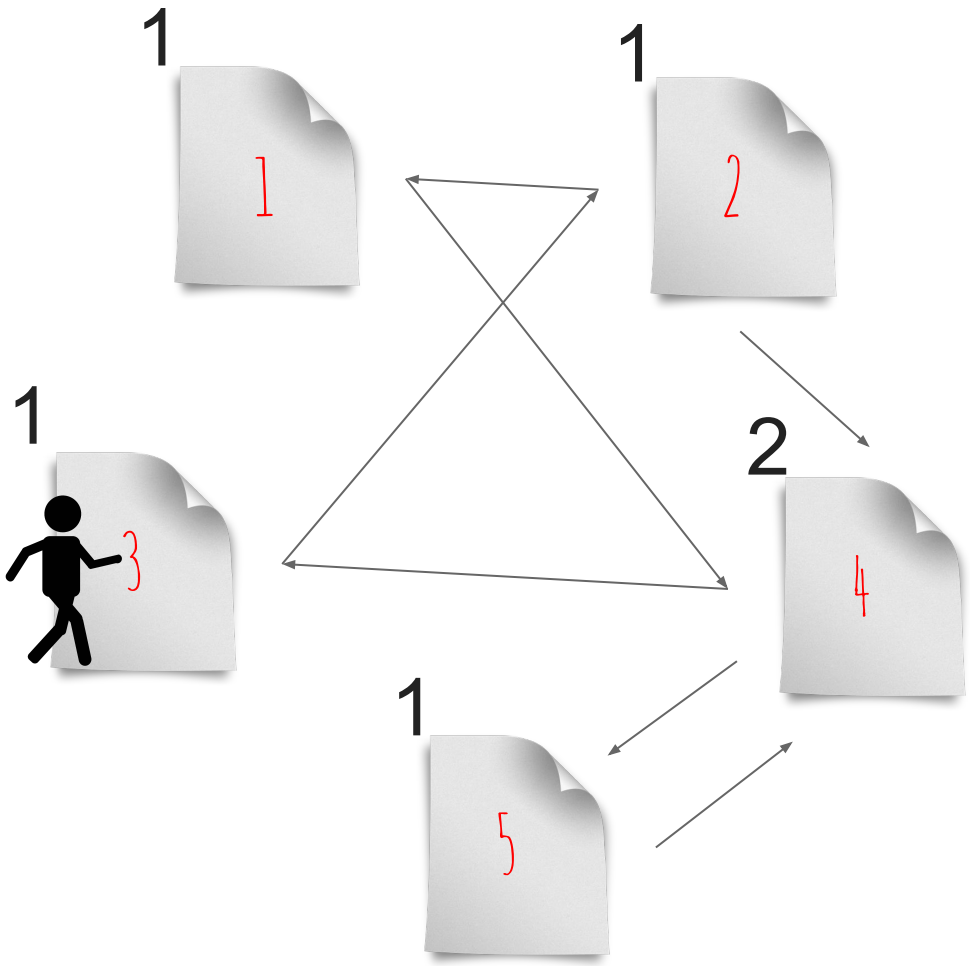
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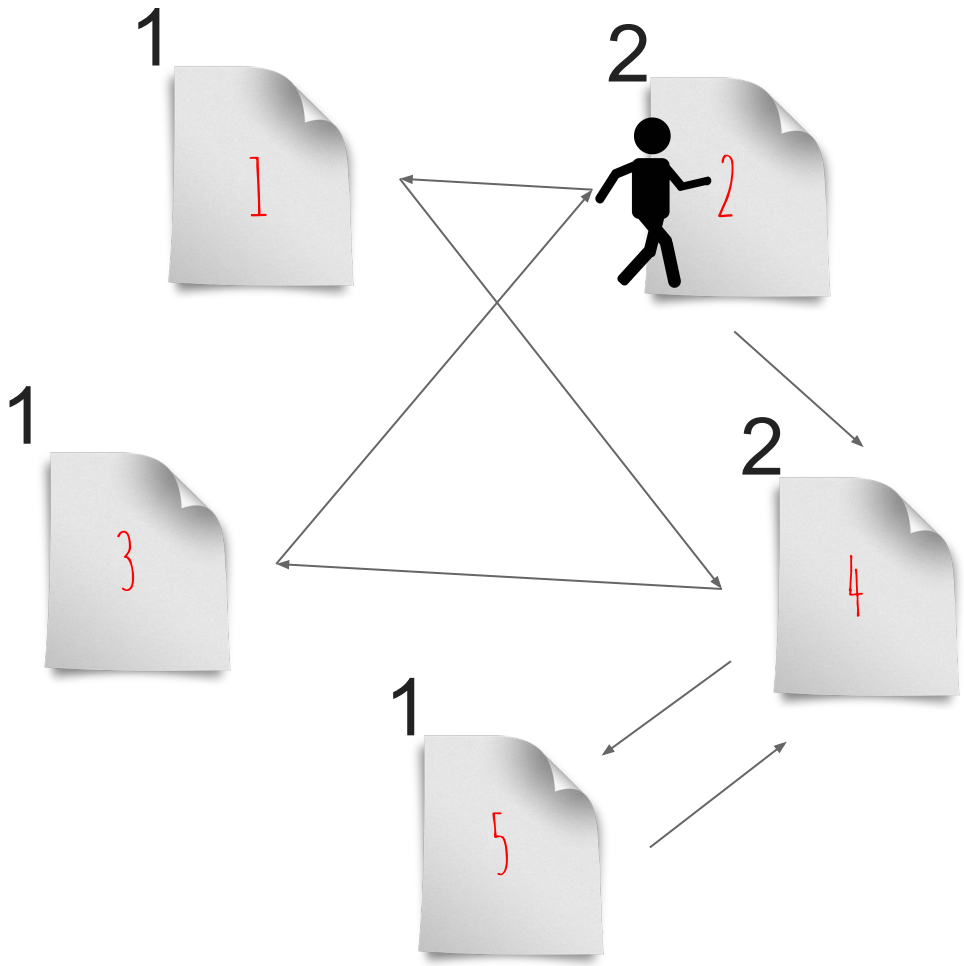
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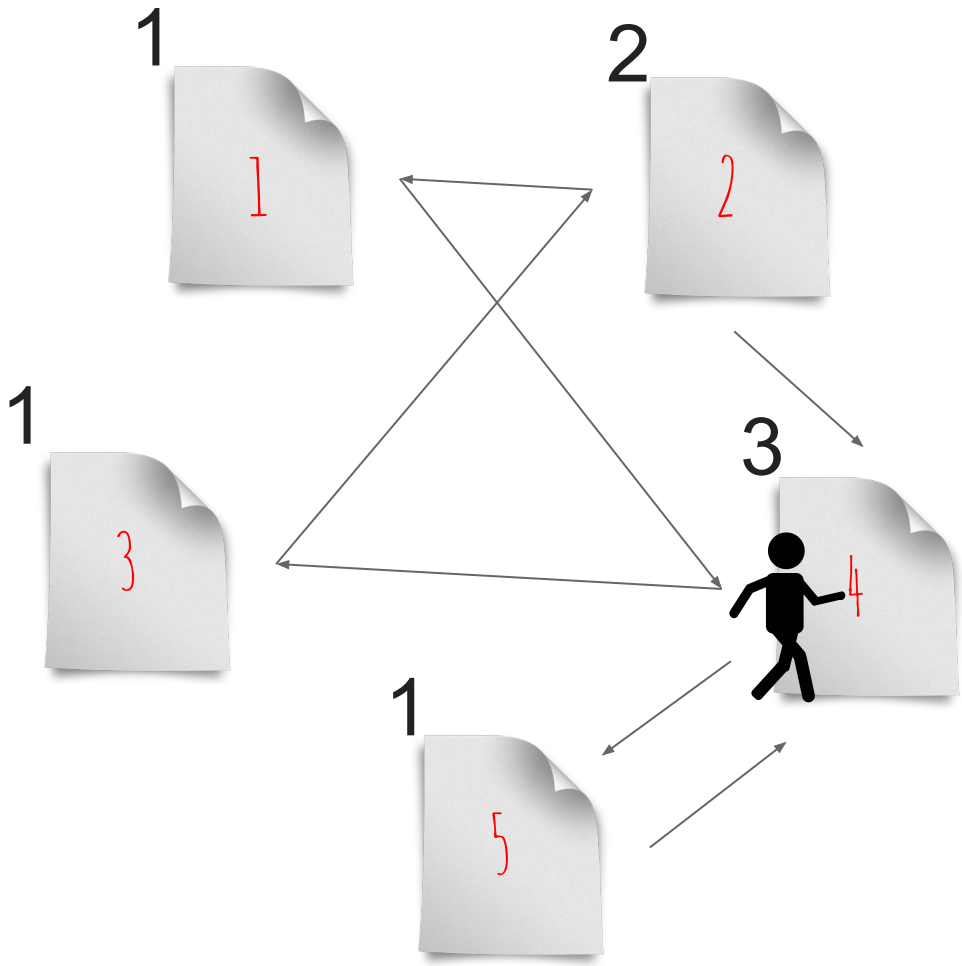
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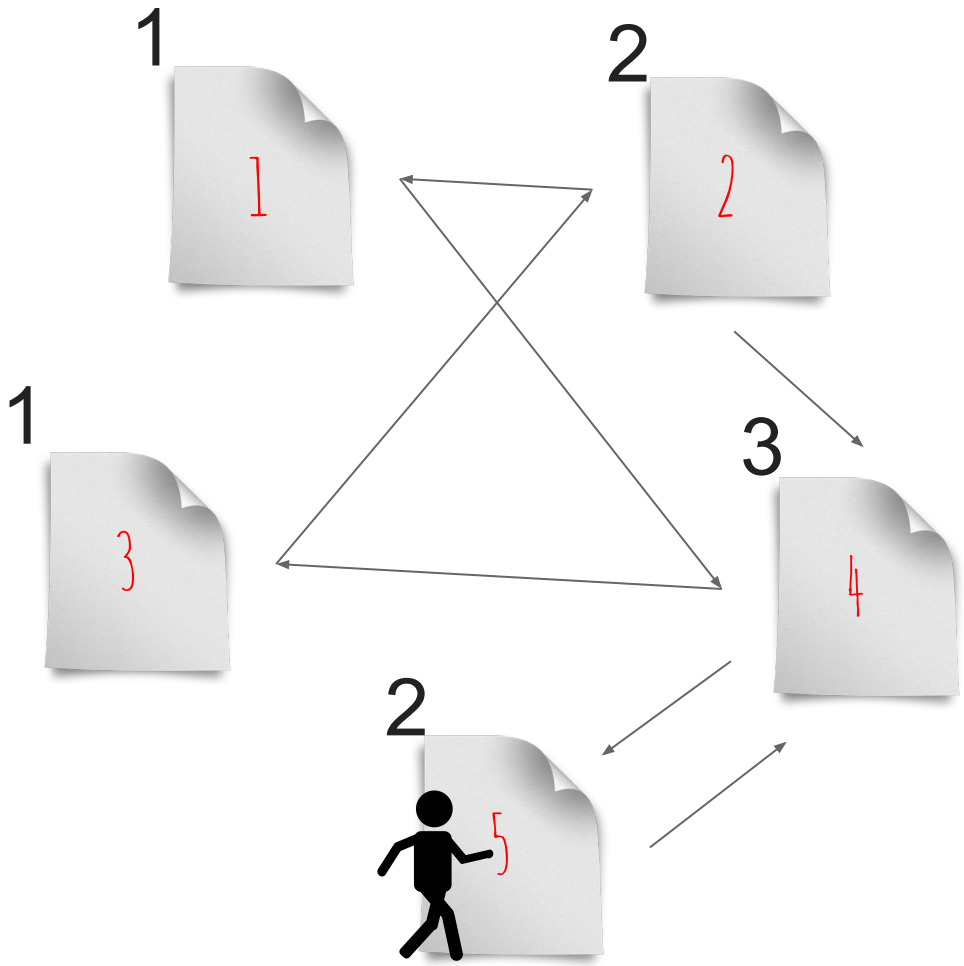
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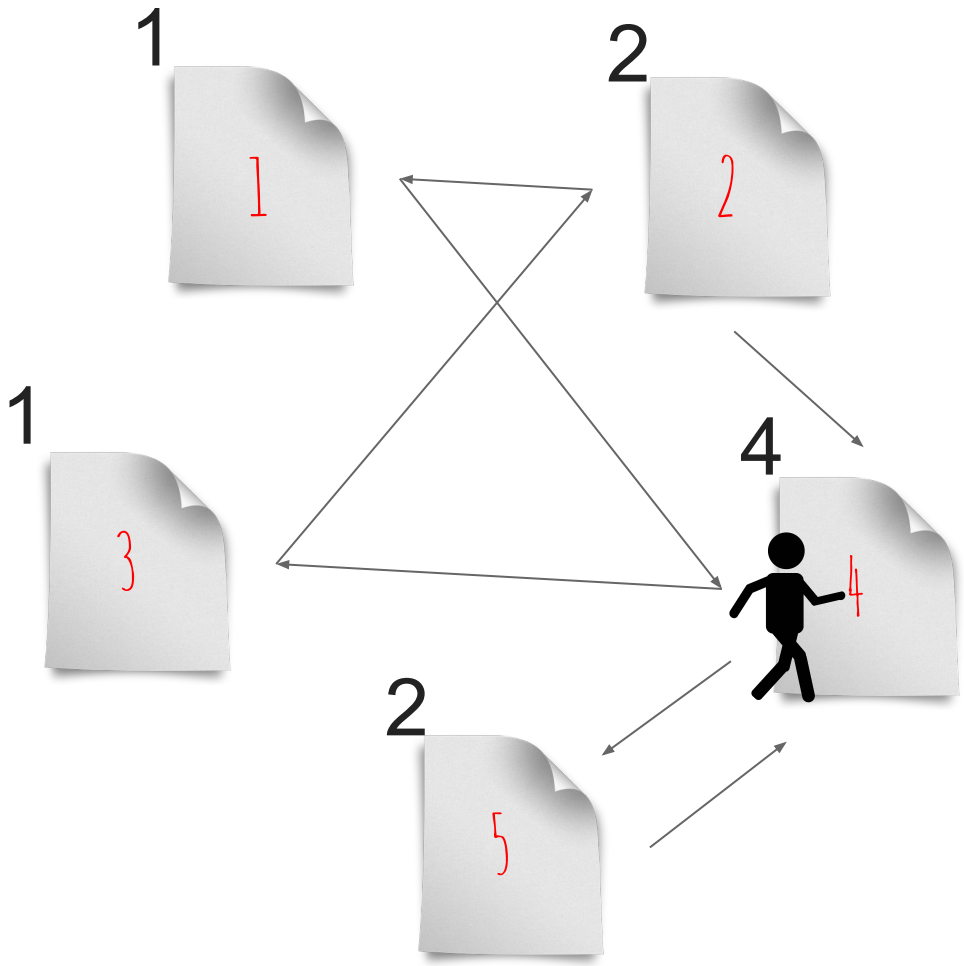
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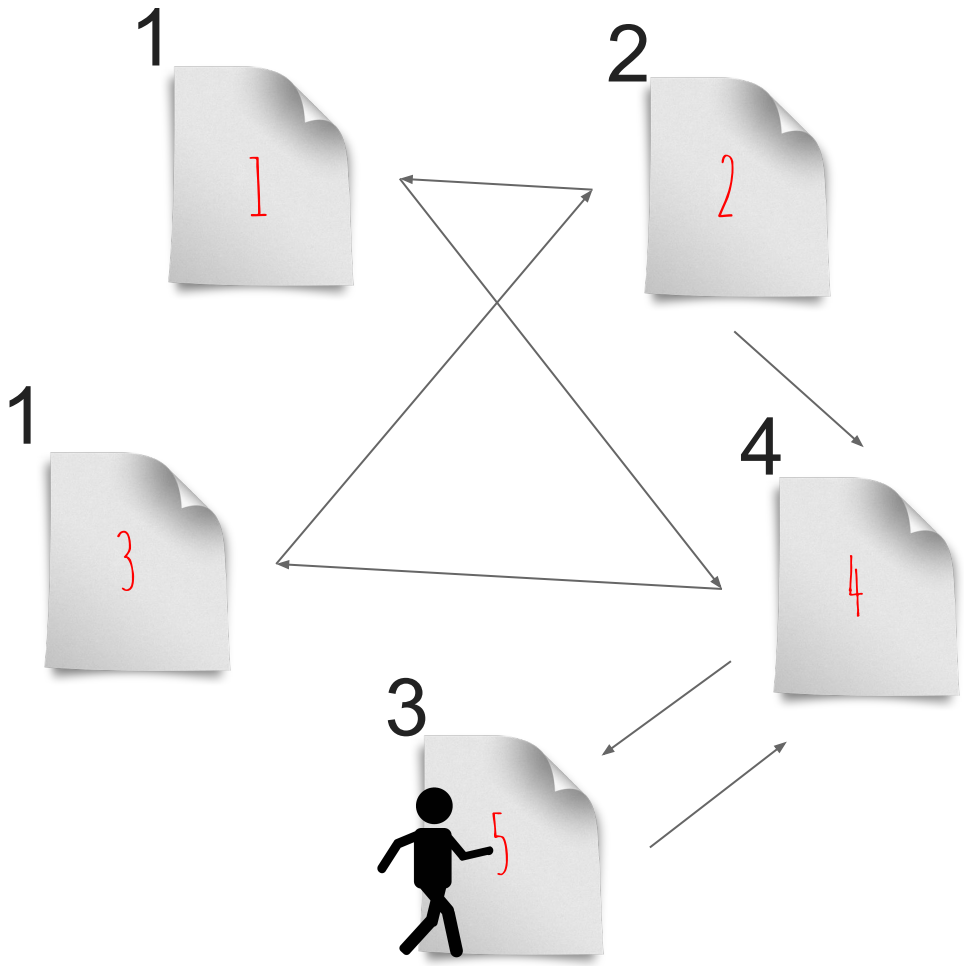
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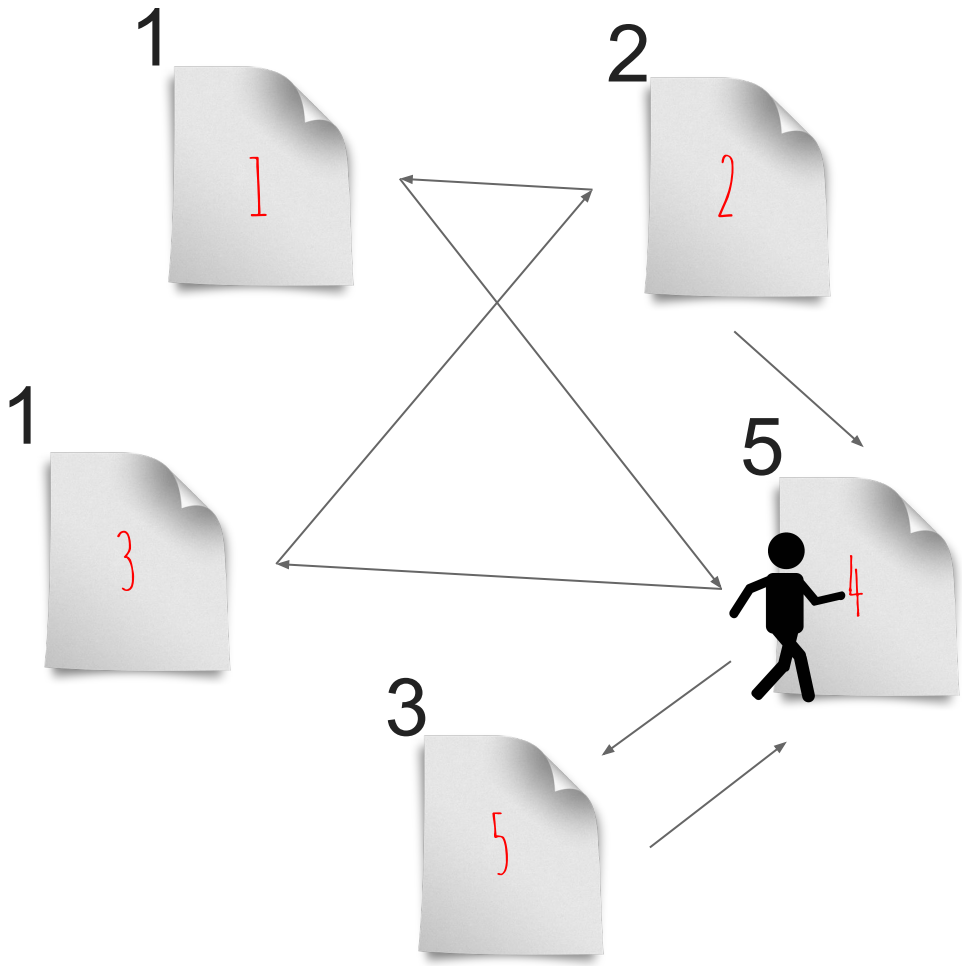
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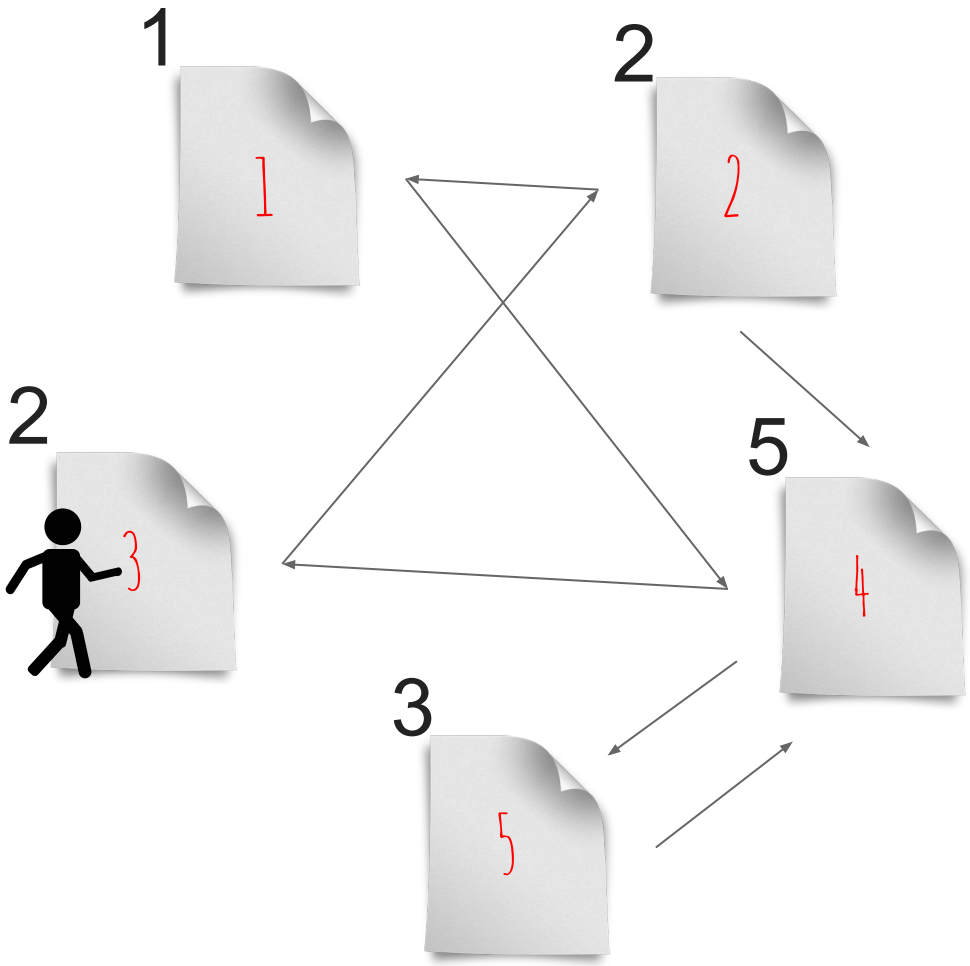
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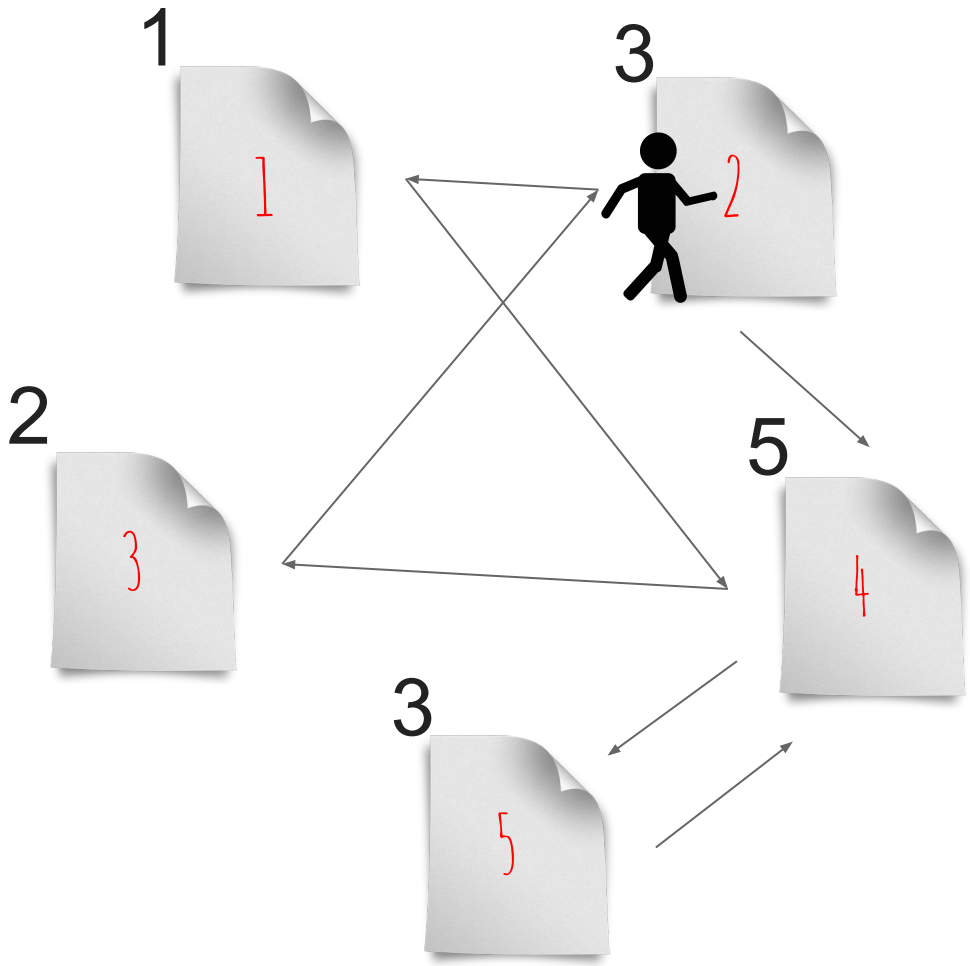
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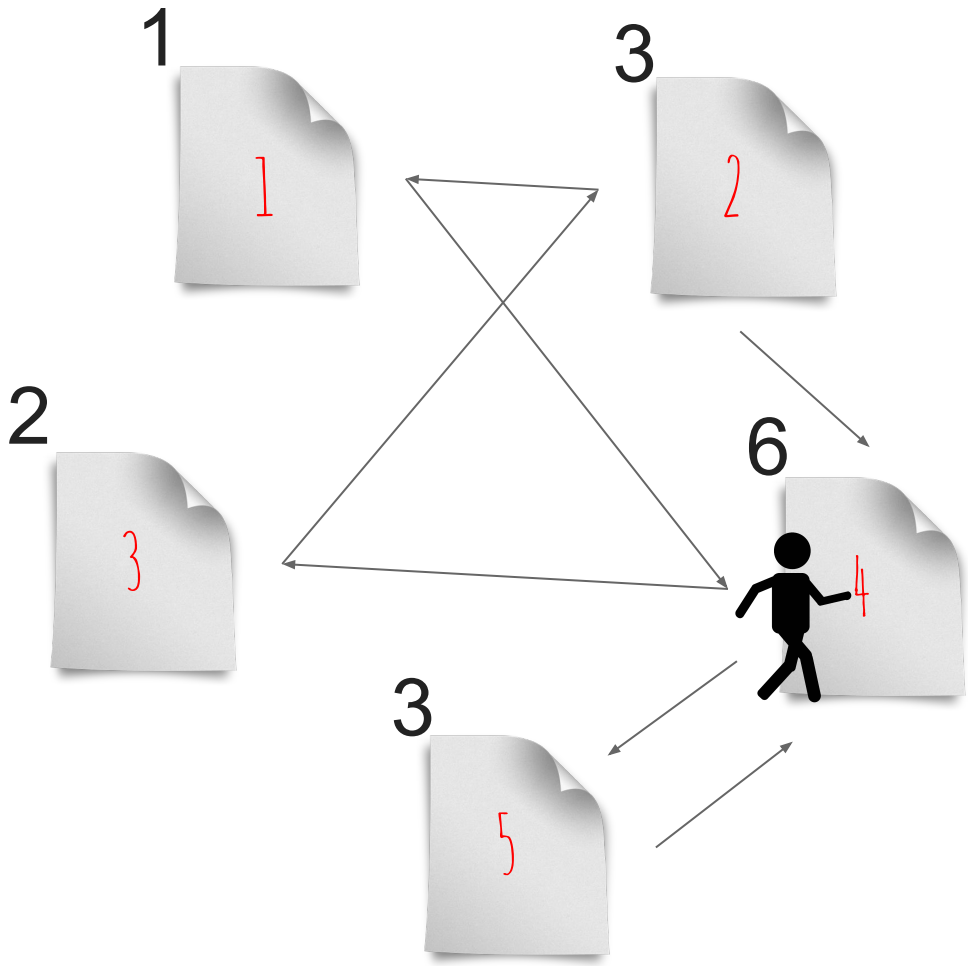
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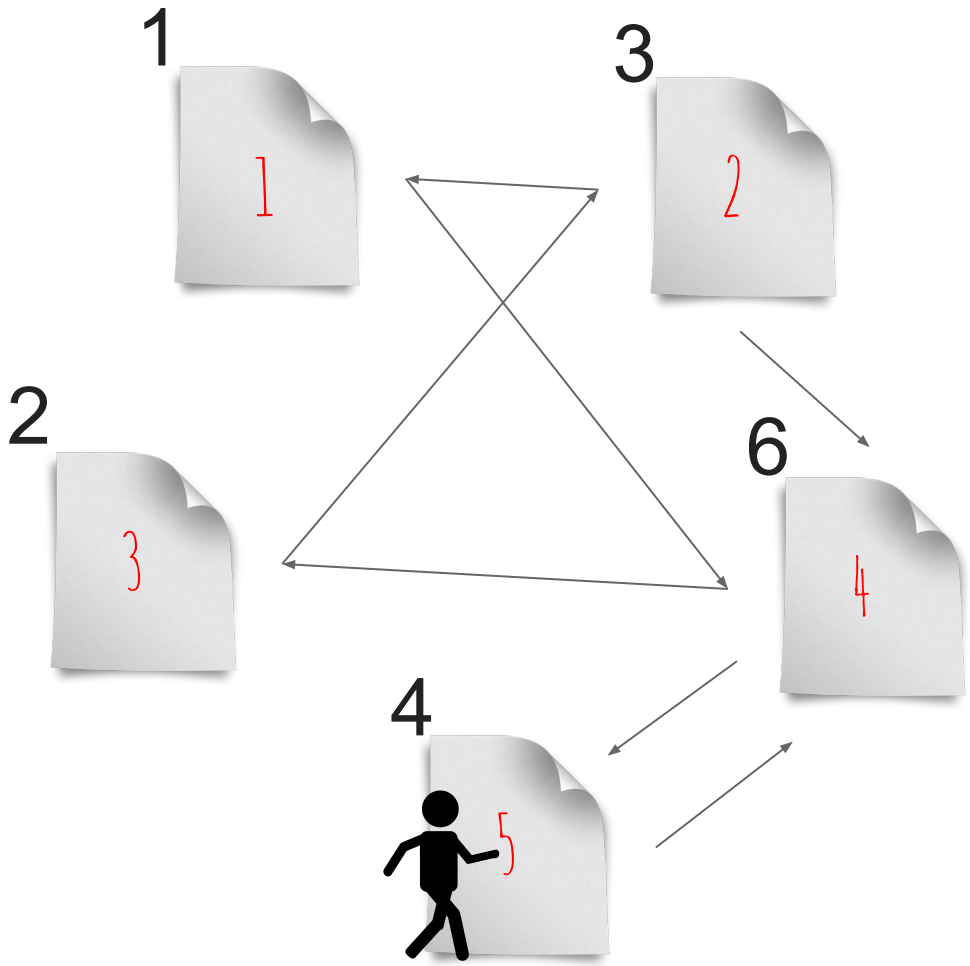
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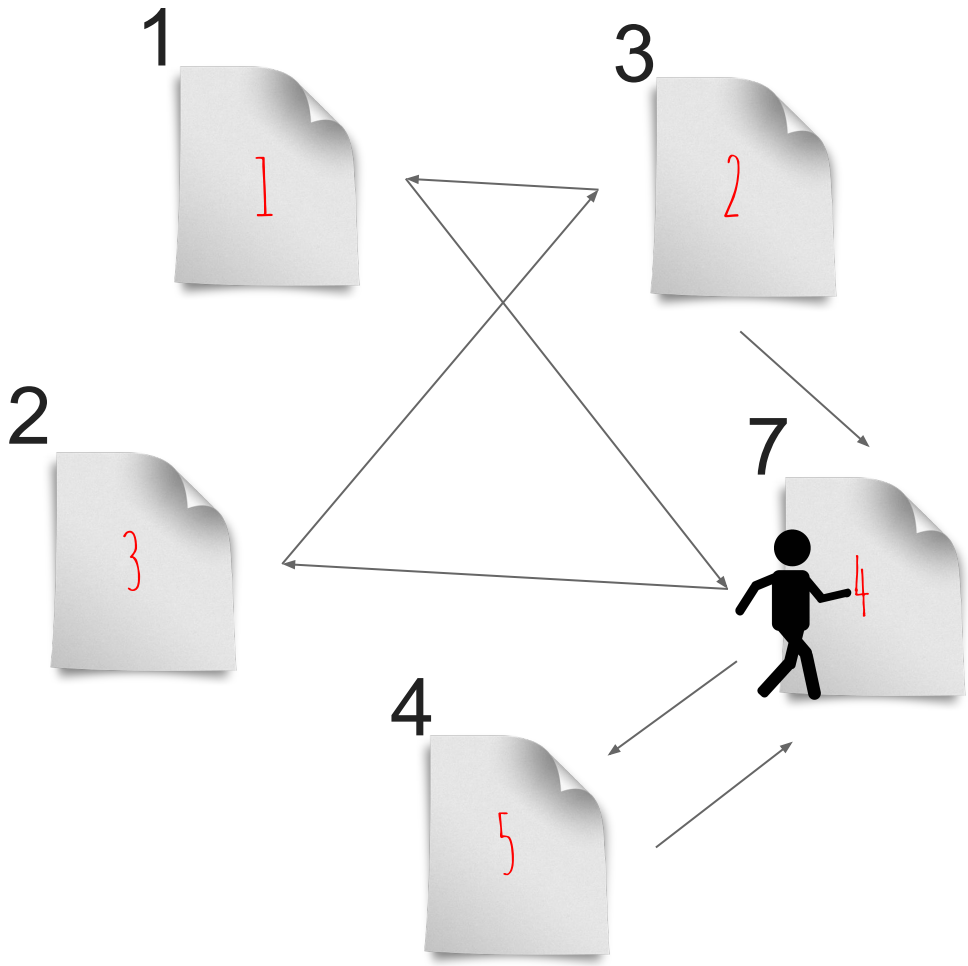
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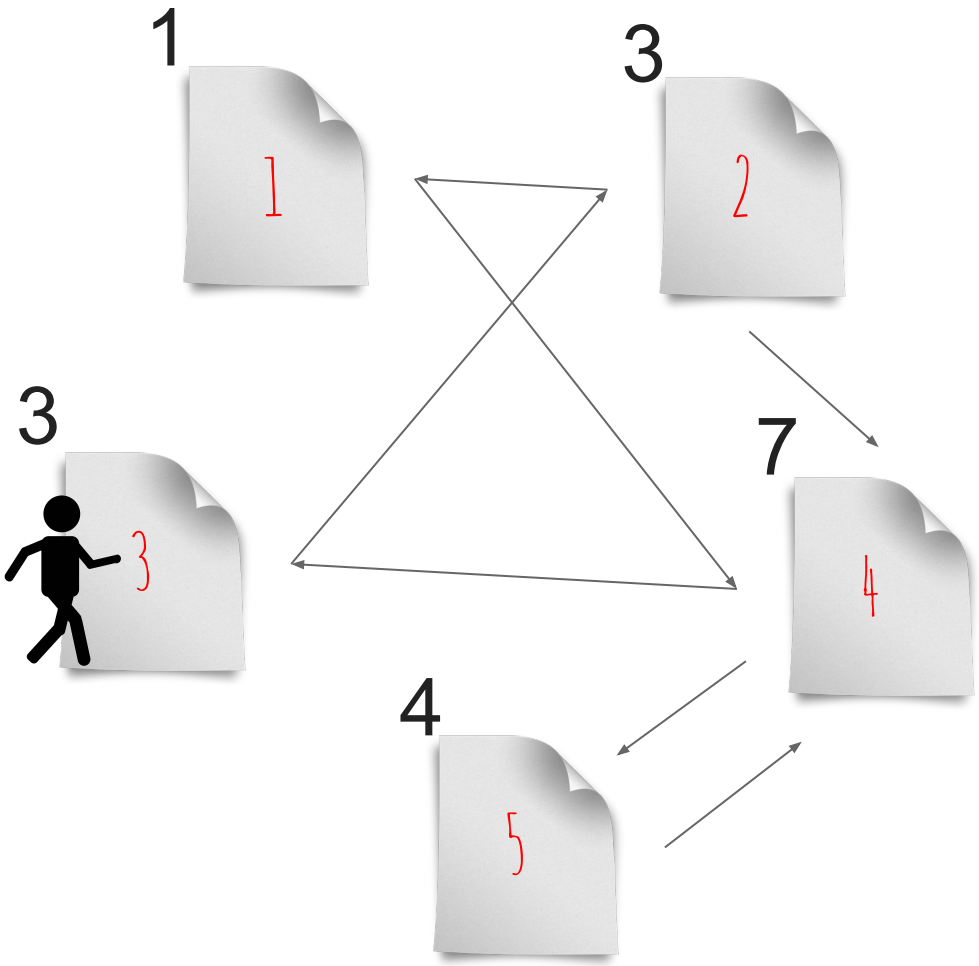
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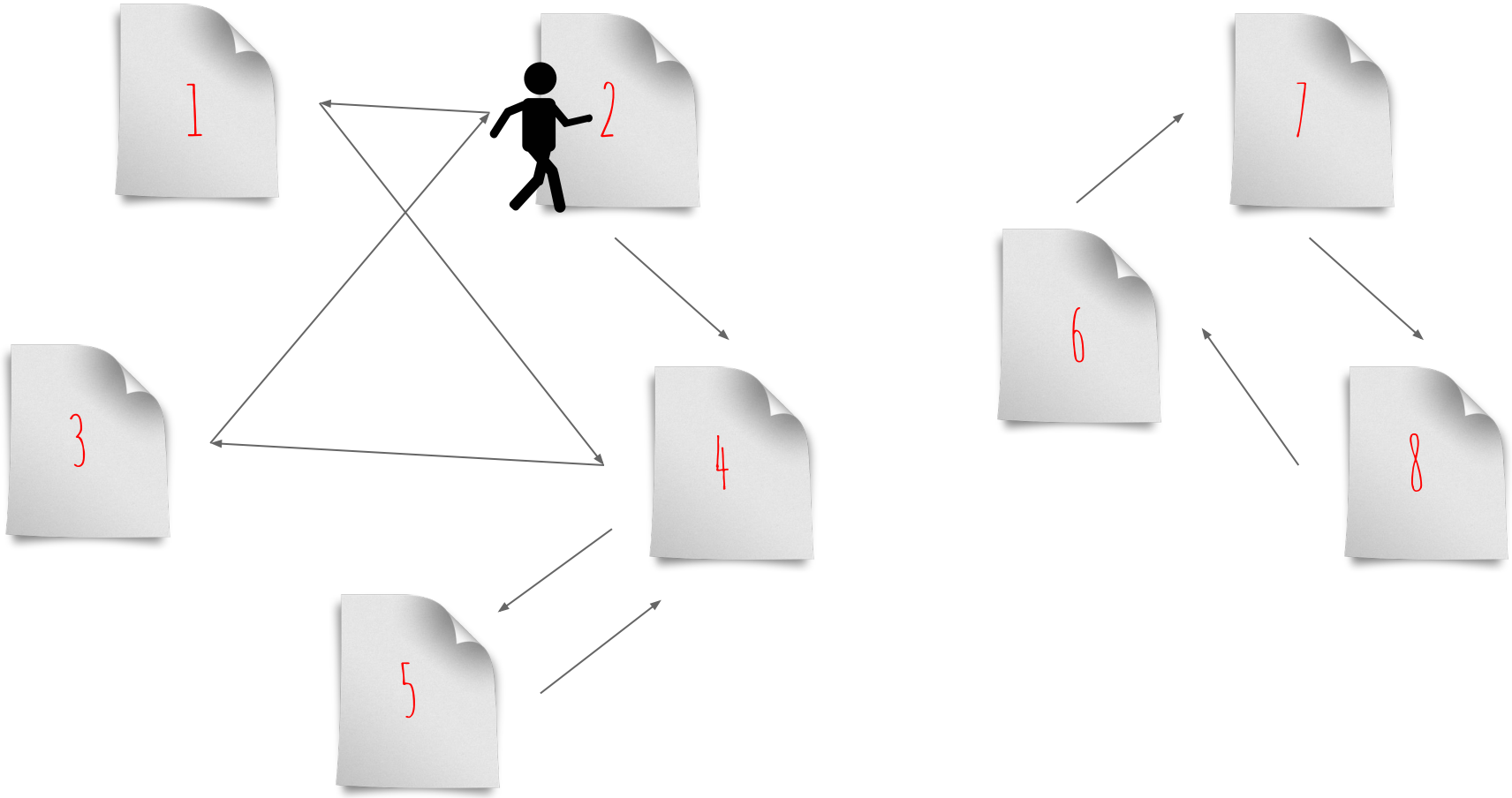
Is the web connected?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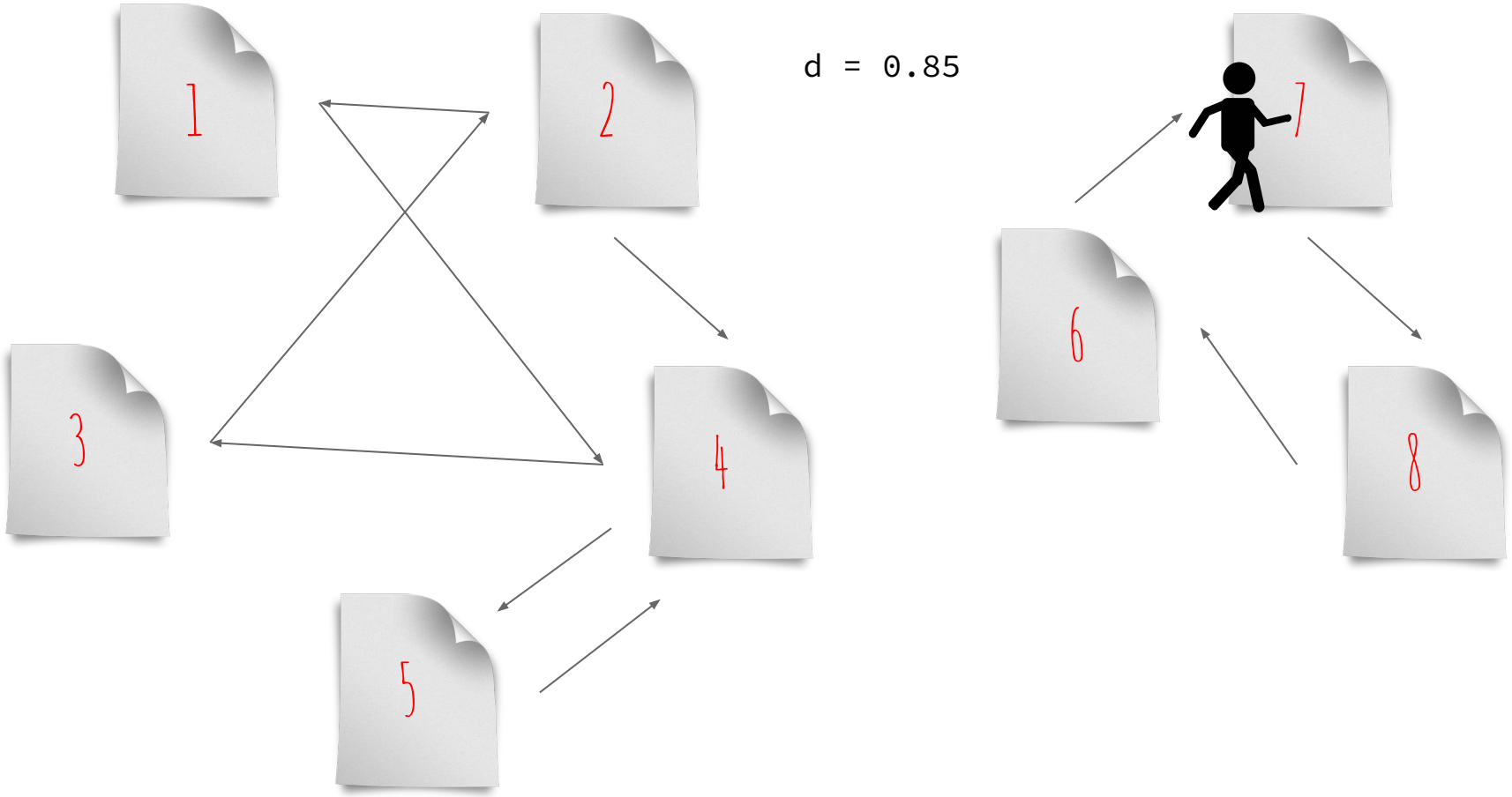
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What is being saved?

- PageRank
- Number of links per page
- Word occurrences
- Word positions
- Capitalization

DOCID

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1	cat	home	ball	…
2	ball	park	home	…
3	home	paint	people	…

WORDID

wordID				
cat	doc1			…
ball	doc2	doc1		…
home	doc3	doc1	doc2	…

Finally,
Search Queries

- Hits
- Position
- Capitalization
- PageRank
- Anchor text

Thanks!