# Project 3: Frequent Items Counting
## A Study on Memory-Efficient Algorithms

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***Abstract*** **– Lorem ipsum ...**

***Keywords*** **– Probabilistic Counter, Count-Min Sketch, Memory-Efficient Algorithms**

## I. Problem Contextualization

This report was written for the course of 'Advanced Algorithms', taught by professor Joaquim Madeira for the master's in Informatics Engineering at DETI UA. It describes the work done for the third assignment of the course [*1*]. The chosen hypothesis was "Hipótese A-2 – Contagem dos Itens Mais Frequentes".
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## II. Dataset

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- *Alice in the Wonderland*, by Lewis Carol - written in English, German, French and Italian
- *A Christmas Carol*, by Charles Dickens - written in English, Finnish, German, Dutch and French
- *King Solomon's Mines*, by H. Rider Haggard - written in English, Finnish and Portuguese
- *Oliver Twist*, by Charles Dickens - written in English, French and German
- *The Adventures of Tom Sawyer*, by Mark Twain - written in English, Finnish, German and Catalan

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## III. Frequent Word Identification

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### *A. Exact Counter*

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### *B. Count-Min Sketch*

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## IV. Literary Study

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## V. Results & Discussion

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## VI. Conclusion

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## References

1. Joaquim Madeira, "3o trabalho - algoritmos probabilísticos", `https://elearning.ua.pt/pluginfile.php/1514391/mod_resource/content/0/AA_1920_Trab_2.pdf`.