INFO-0027: Programming techniques

Project 1: Performance study

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Academic year 2020 - 2021

1 Introduction

We decided to perform our perfomance study by doing 1000 differents creation of the `MAGIC` A.D.T. and by measuring the mean time passed in the `MAGICindex` and `MAGICreset` functions and the mean amount of allocated memory.

We chose to deal with an increasing number of addresses to be able to analyse the differences between the implementation on graphics. The addresses we used to perform our studies were randomly generated 4 bytes addresses. We used the same randomly generated batch of addresses for the two different implementations.

2 Time perfomance

2.1 Mean time passed in the MAGICindex function

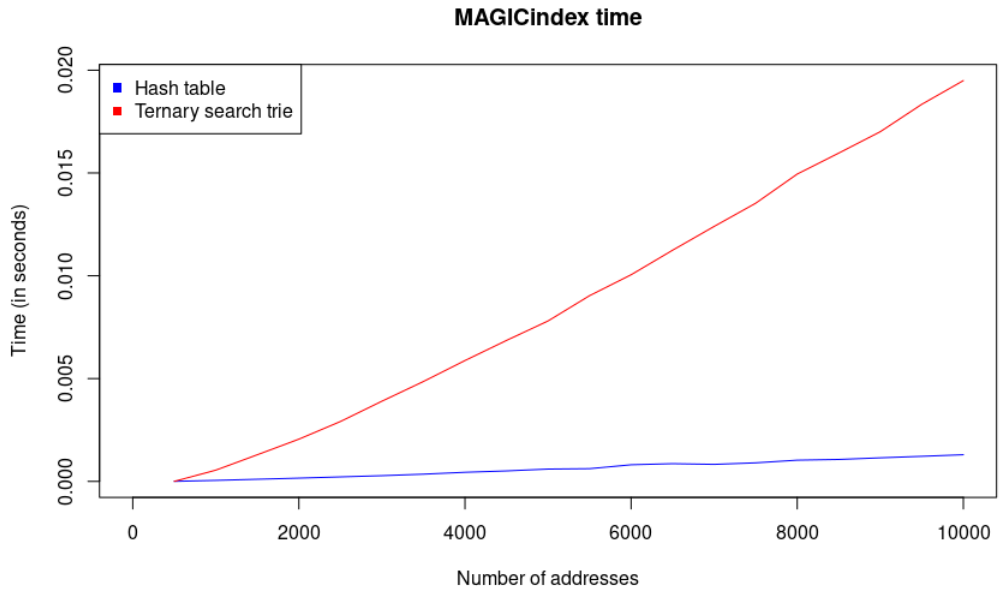

Figure 1: Mean total time passed in the MAGICindex function according to the number of addresses of our two implementations.

2.2 Mean time passed in the MAGICreset function

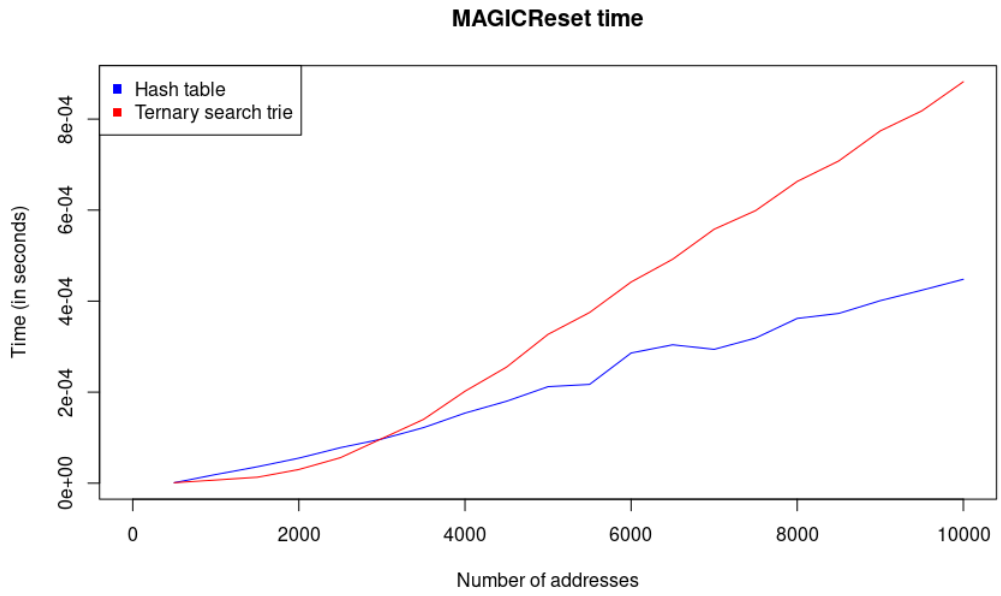

Figure 2: Mean total time passed in the MAGICreset function according to the number of addresses of our two implementations.

2.3 Sum of the two previous mean times

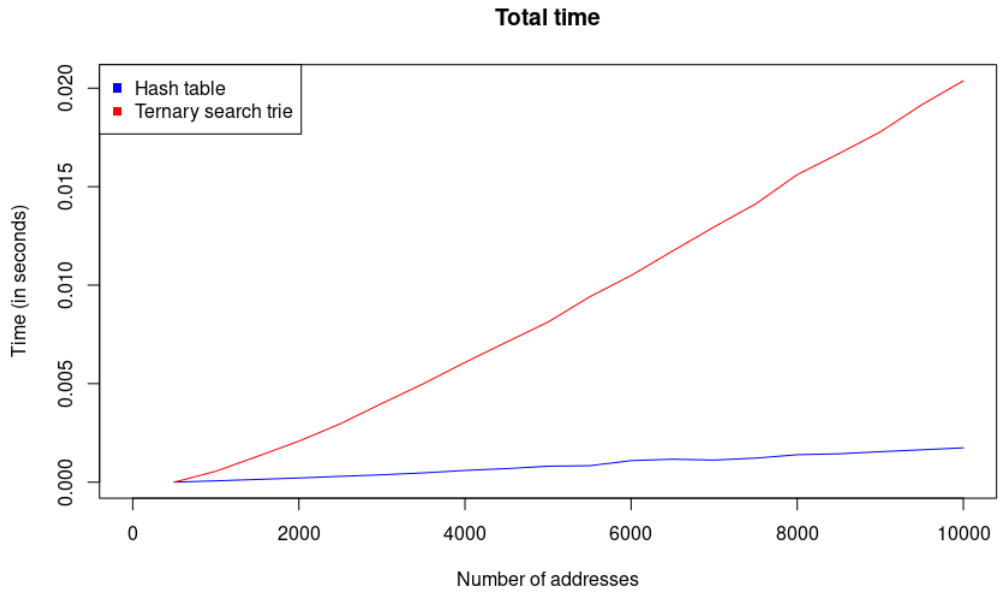

Figure 3: Mean total time passed in the A.D.T. functions according to the number of addresses of our two implementations.

3 Memory perfomance

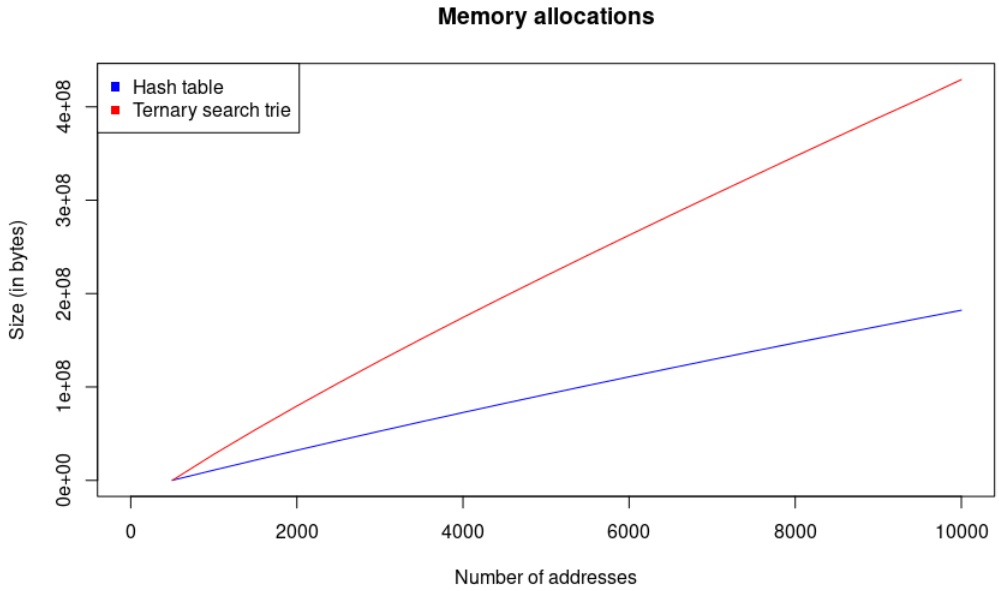

Figure 4: Mean amount of memory allocated according to to the number of addresses of our two implementations.

4 Conclusion

In conclusion, we observe that our first implementation (hash table) has better perfomances than our second one (ternary search trie) in terms of time and memory.