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Outline

Introduction

Implementation

- Modifications

- Performance evaluation

- Performance results

Verification

- What to prove ?

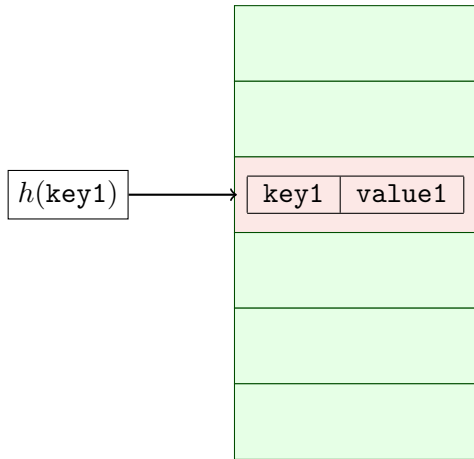
- Proof steps

Conclusion

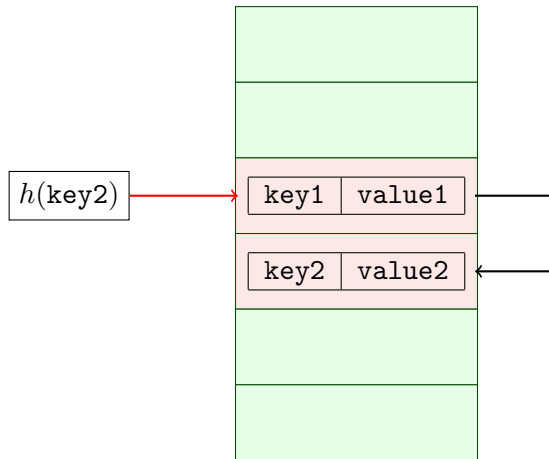
- Hash Table software

- Side effects

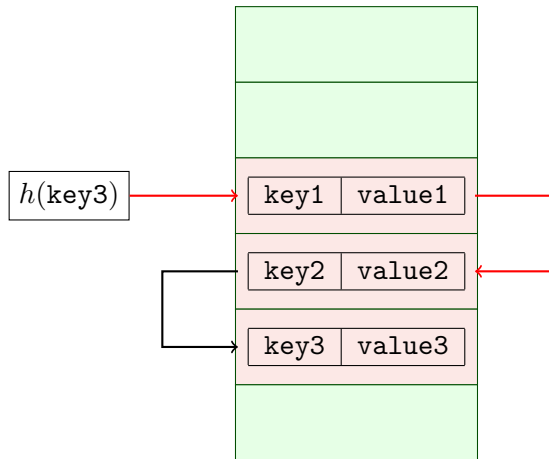
Naive hash table



Naive hash table



Naive hash table



Double hashing

Provided implementation

Provided verification

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Hash-Table software

- ▶ Efficient (when key is present).
- ▶ Formally verified.
- ▶ Requires `capacity` and `offset` coprime.

Side effects

- ▶ 6 commits in Verifast tree (`long long` support).
- ▶ 9 issues on Verifast.
- ▶ A random access sequence generator & benchmark.

Q&A