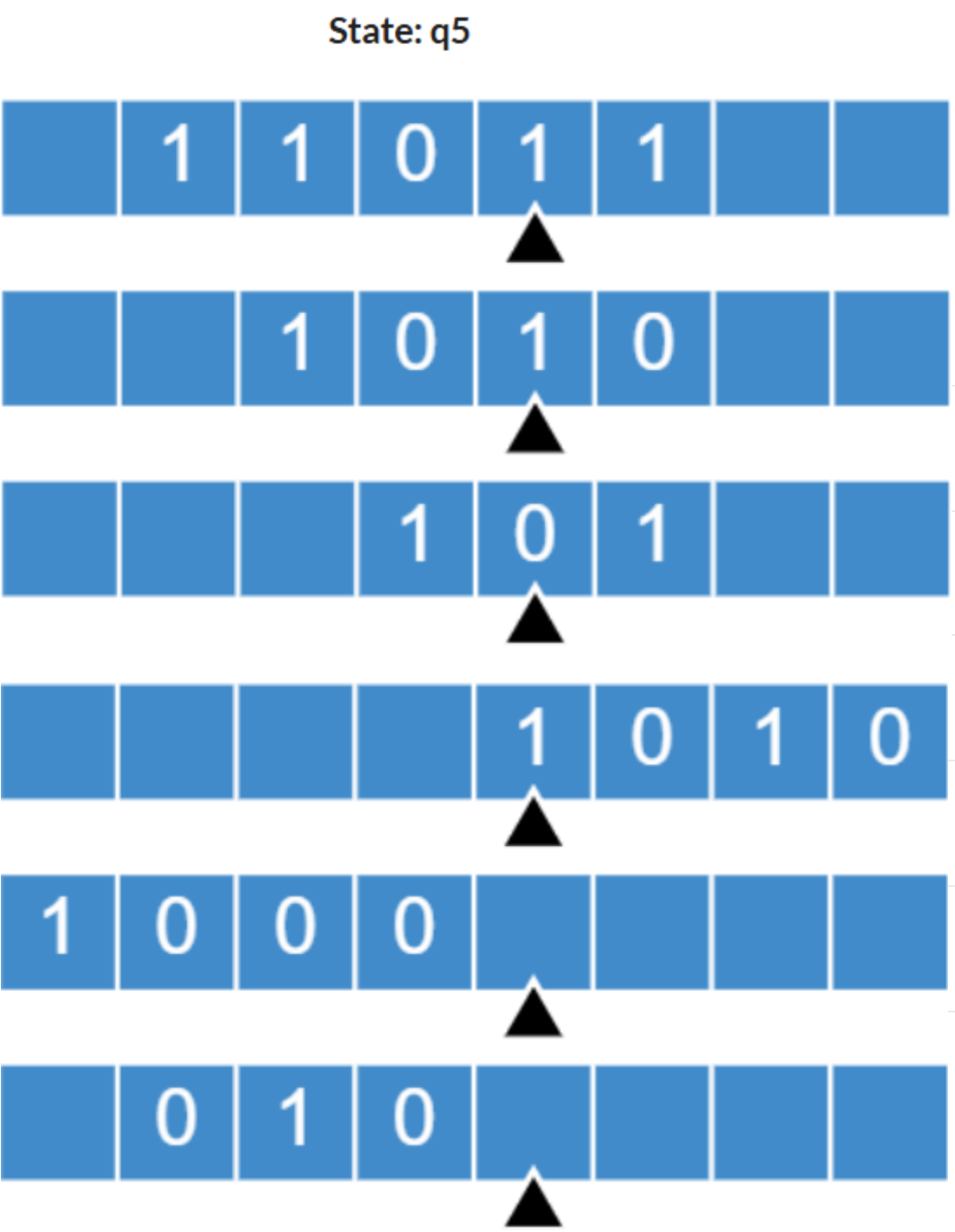


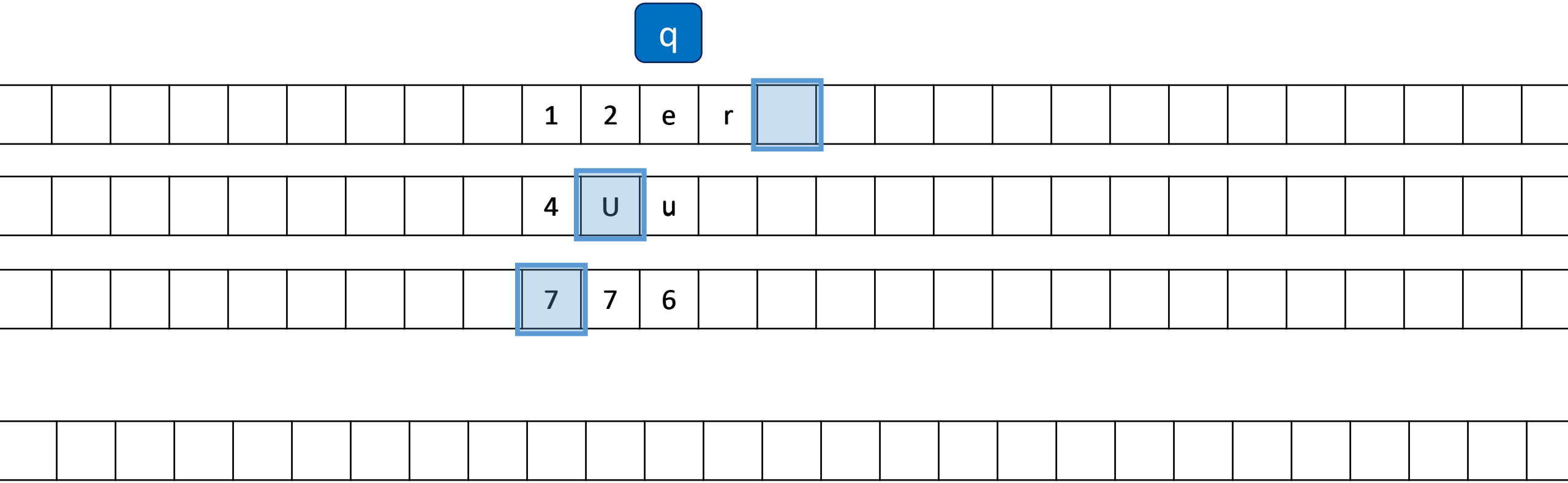
3a

Multitape Turing Machines

Analiza Algoritmilor

Image source: https://www.turingmachinesimulator.com/

Single tape simulation



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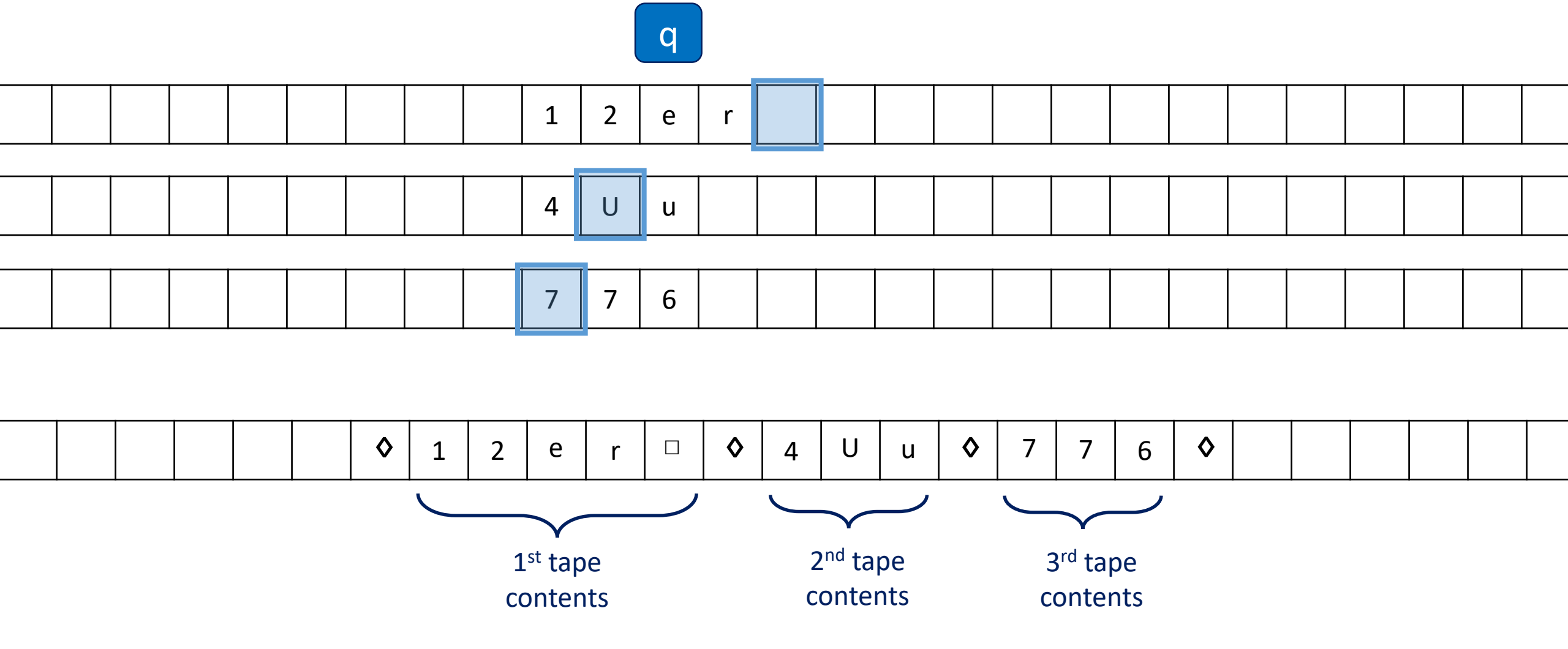

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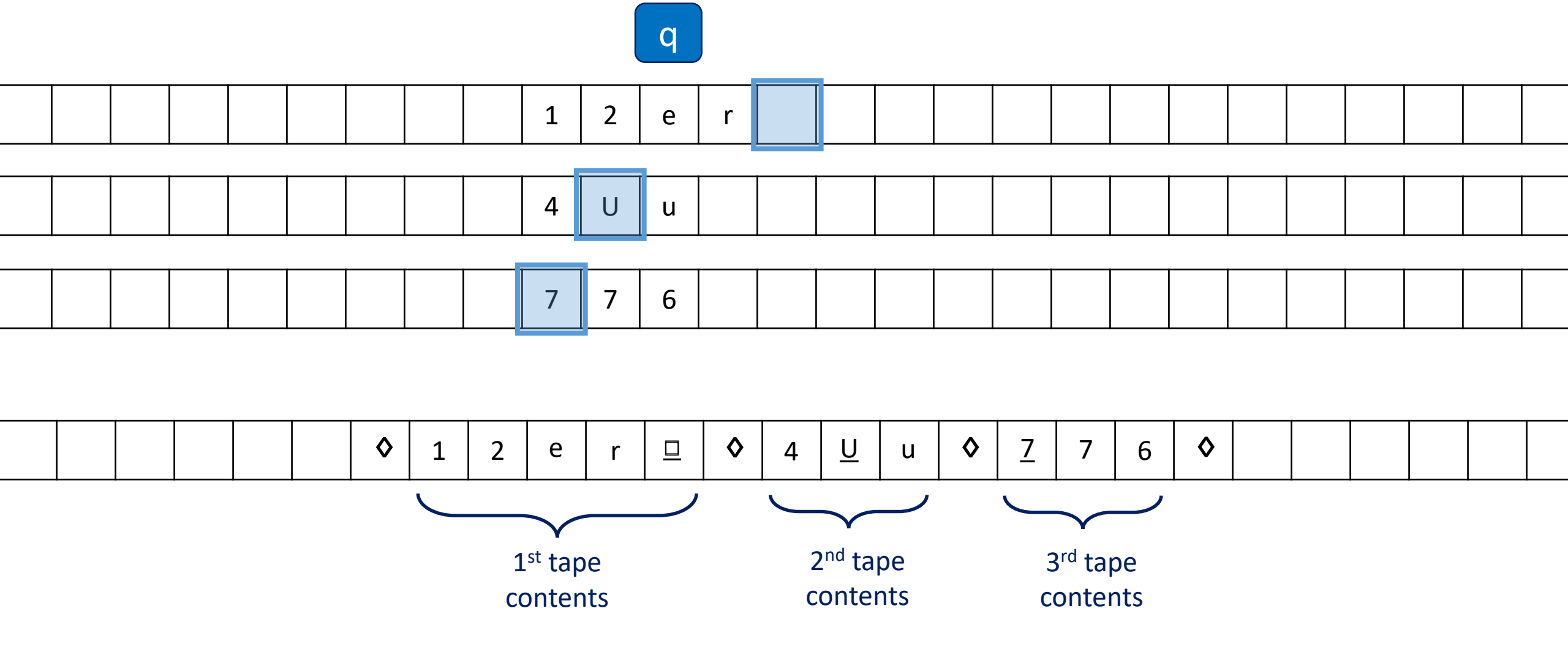

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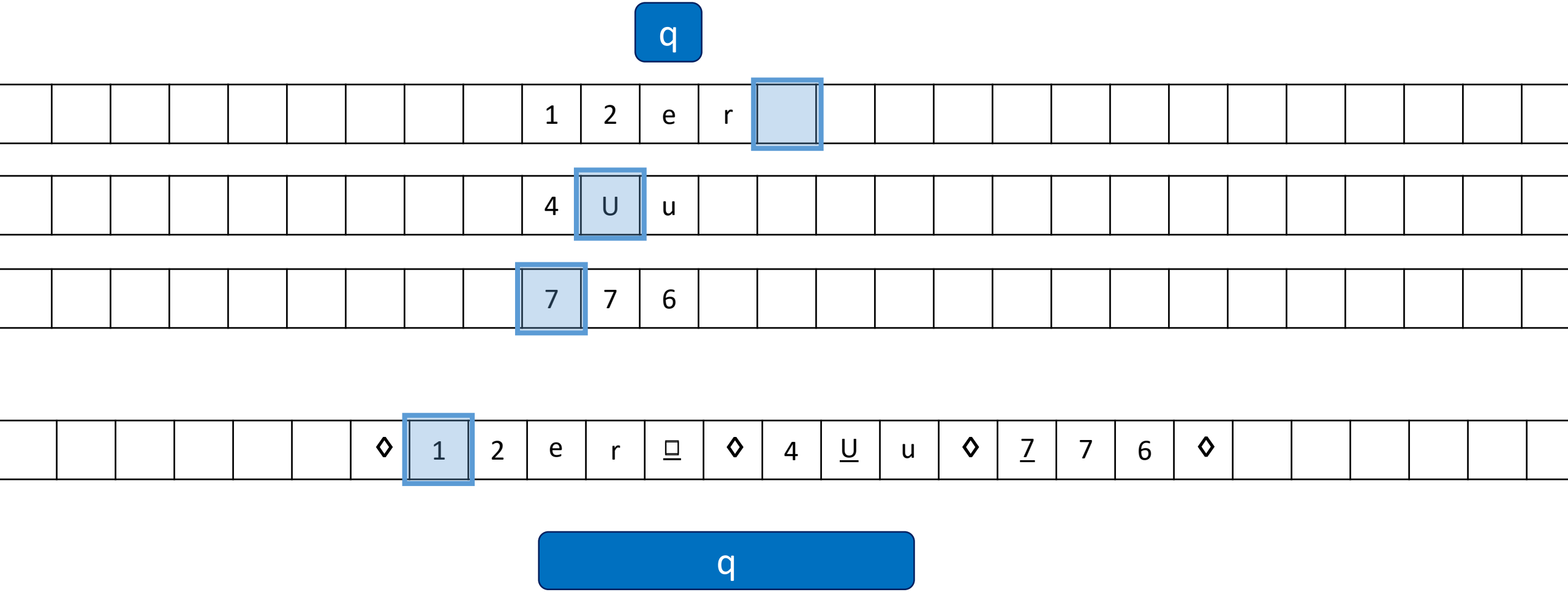

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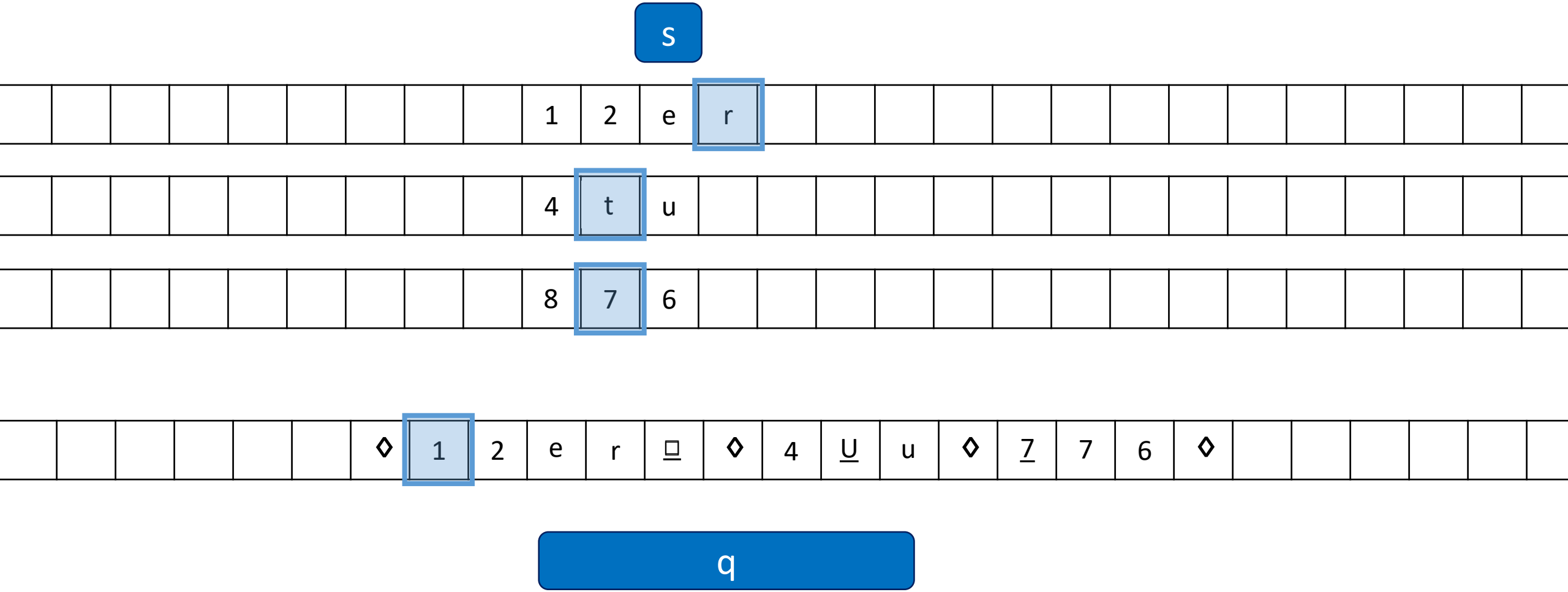

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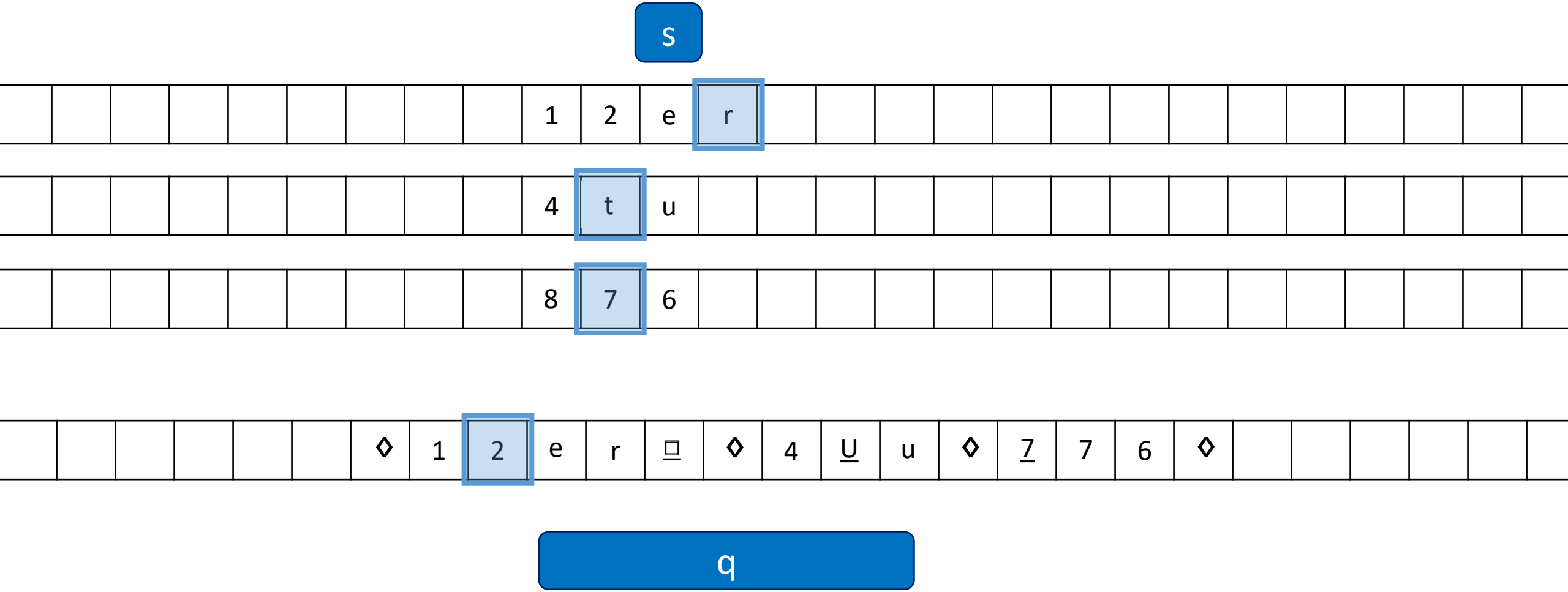

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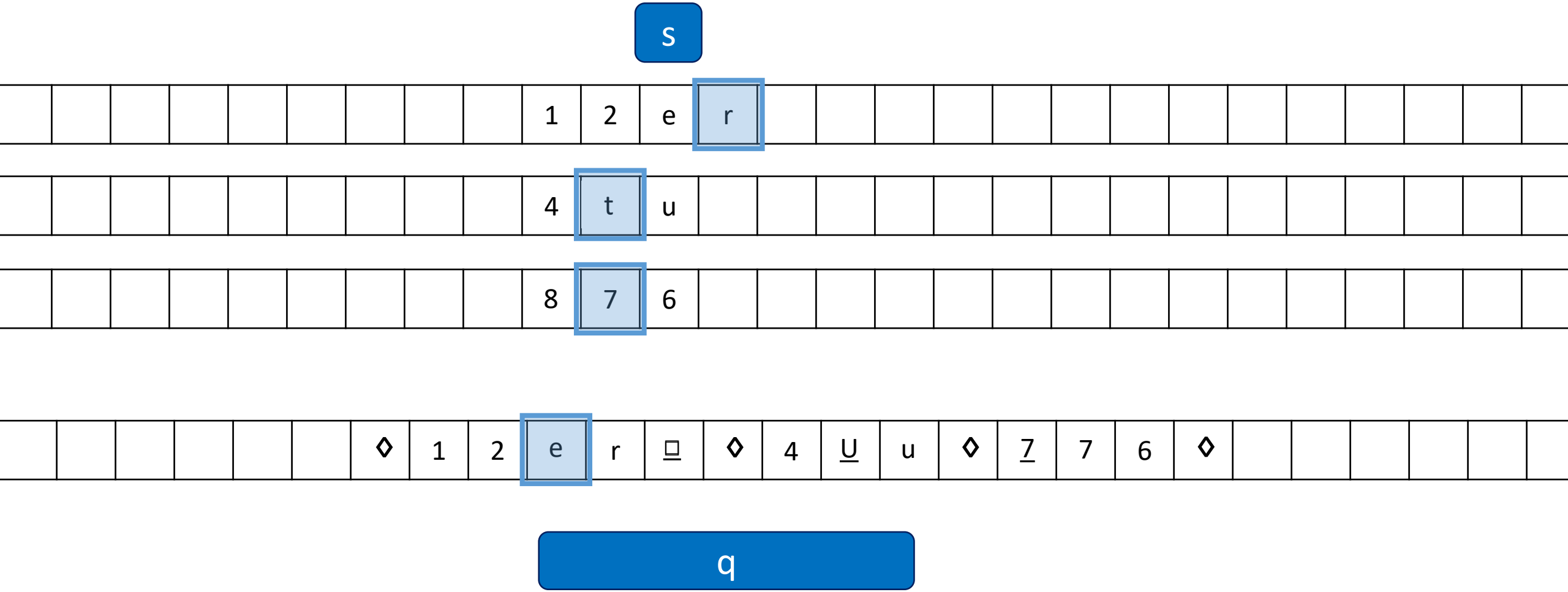

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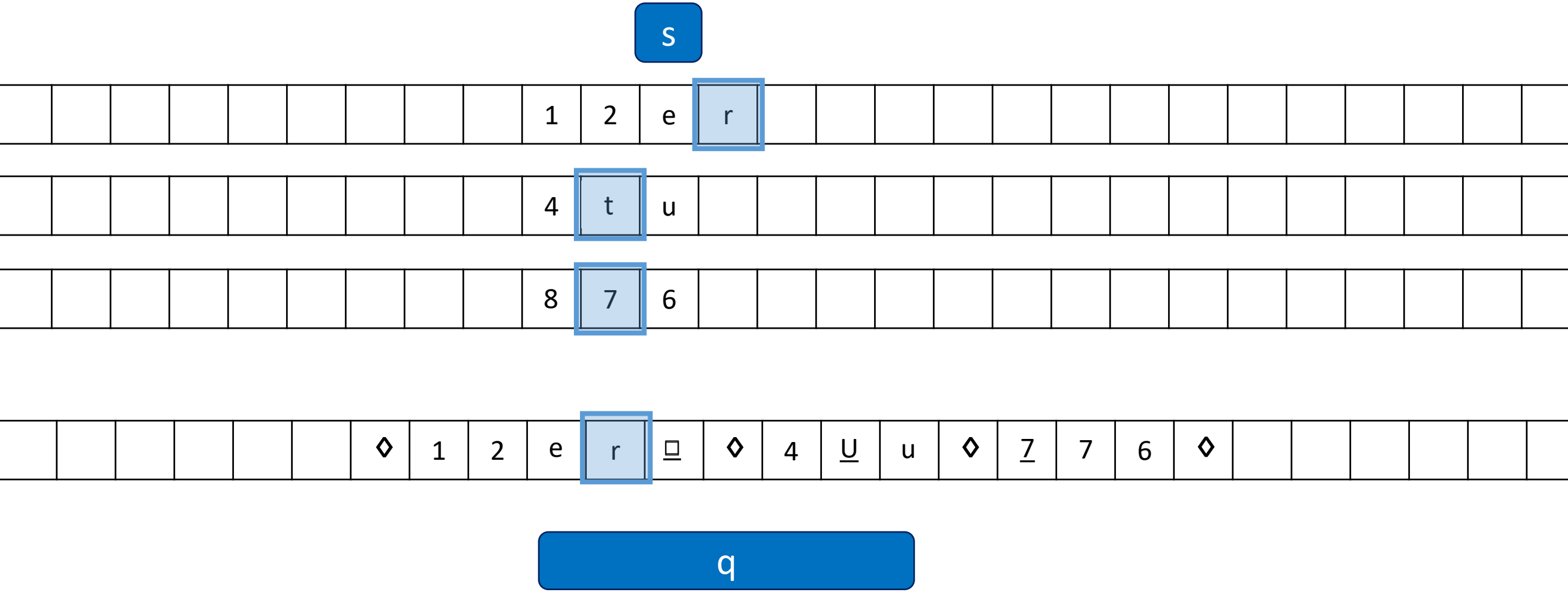

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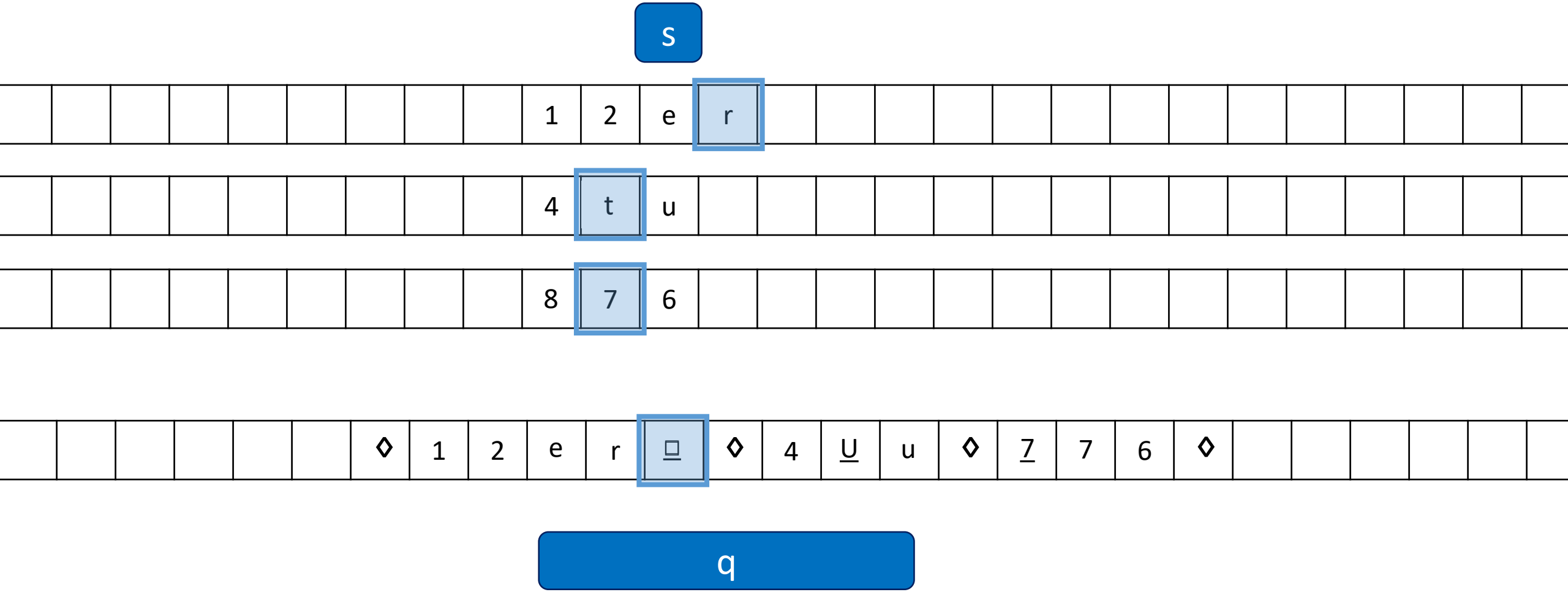

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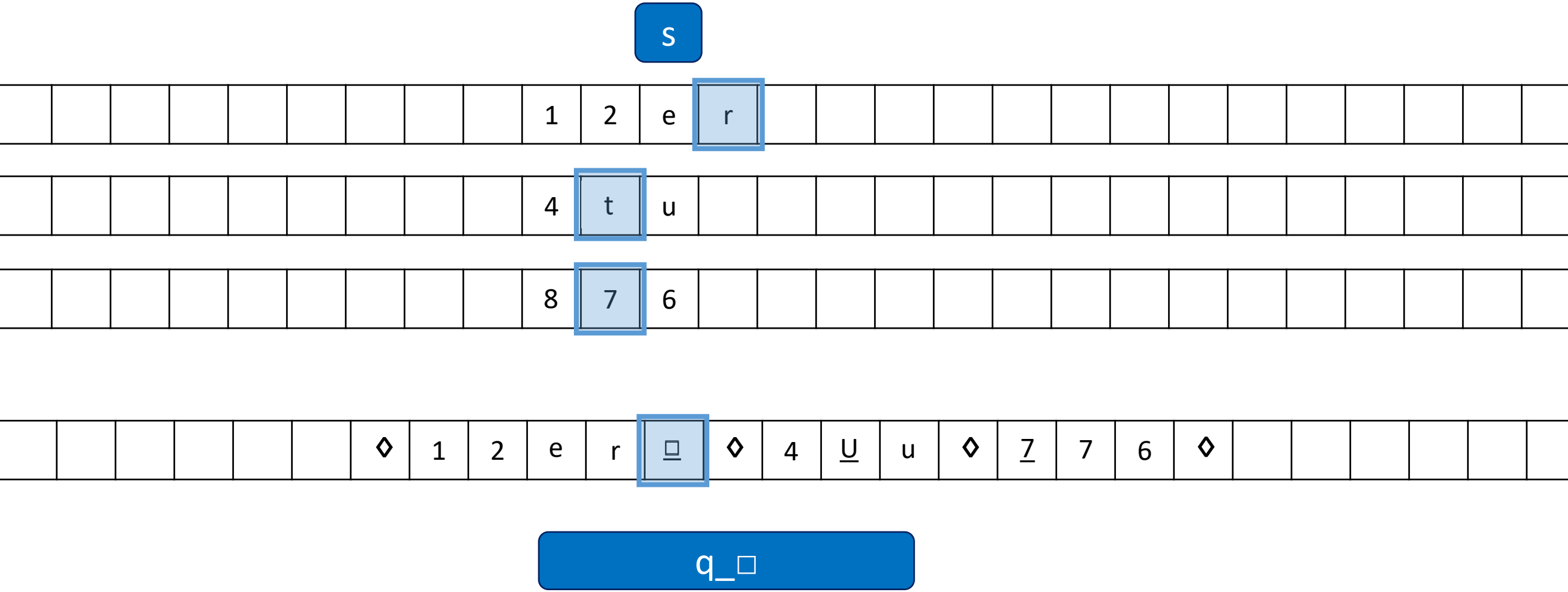

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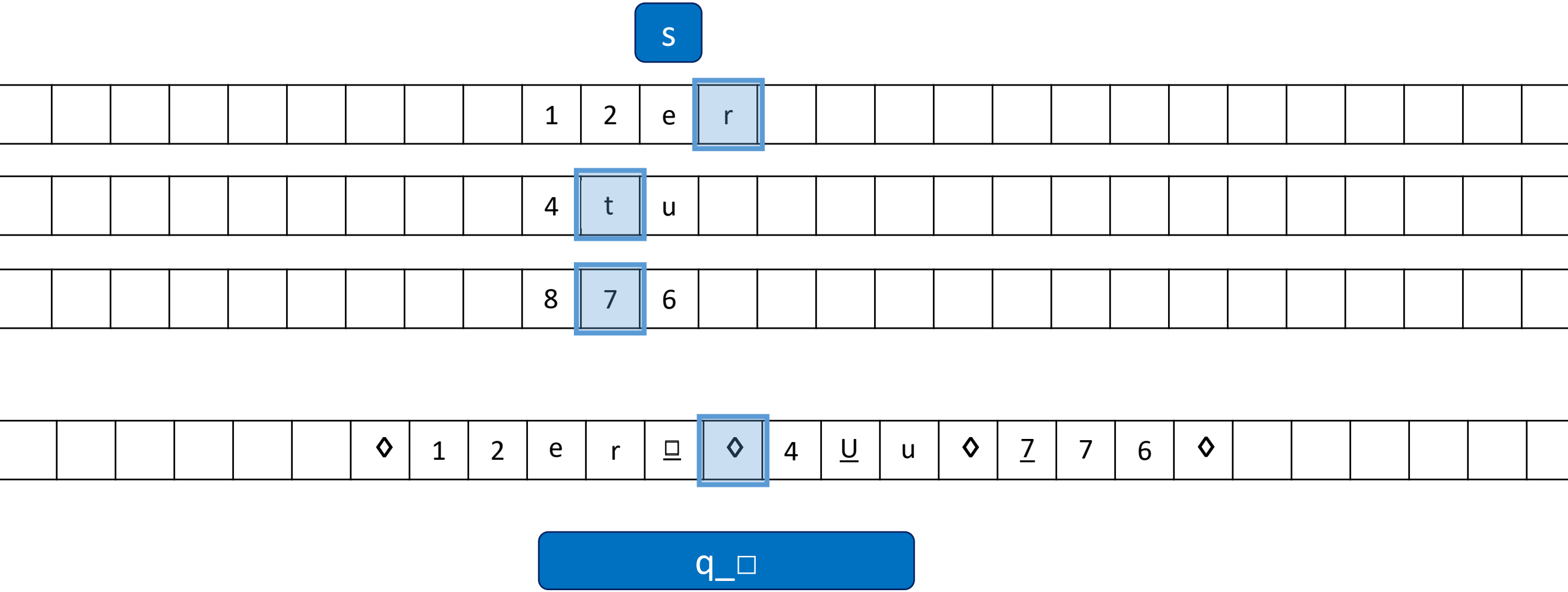

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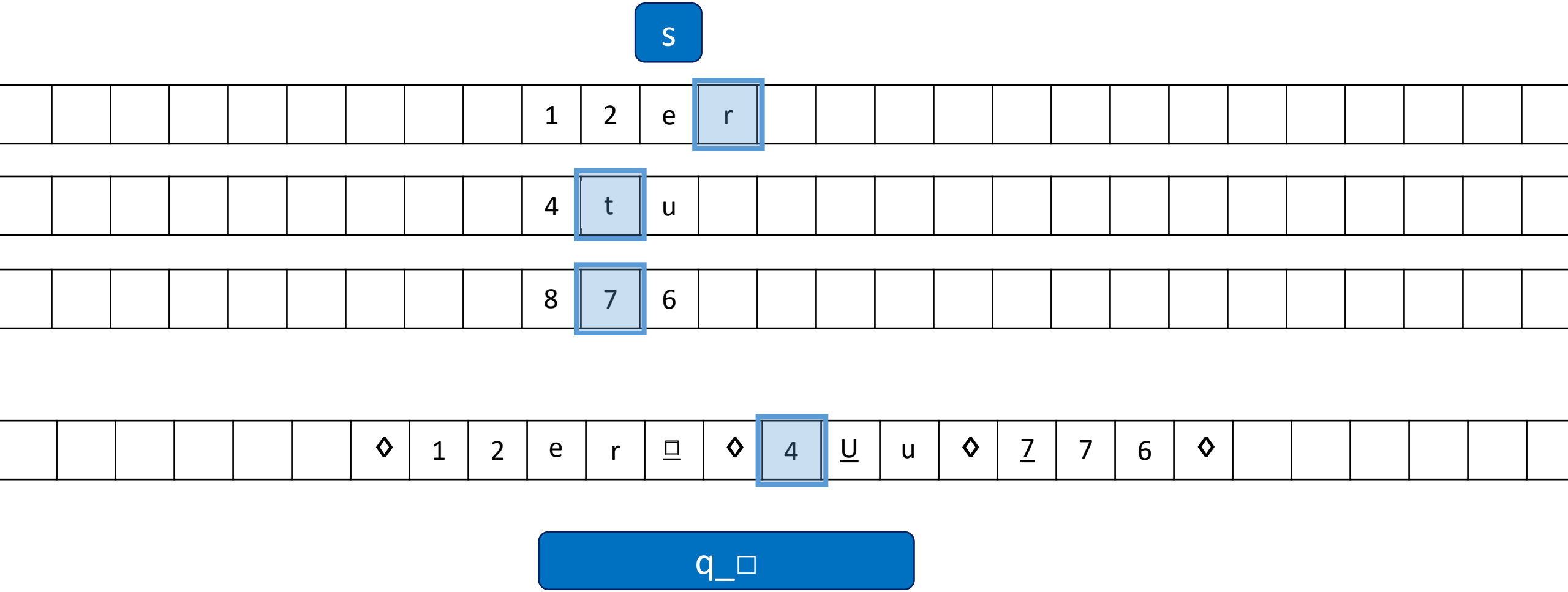

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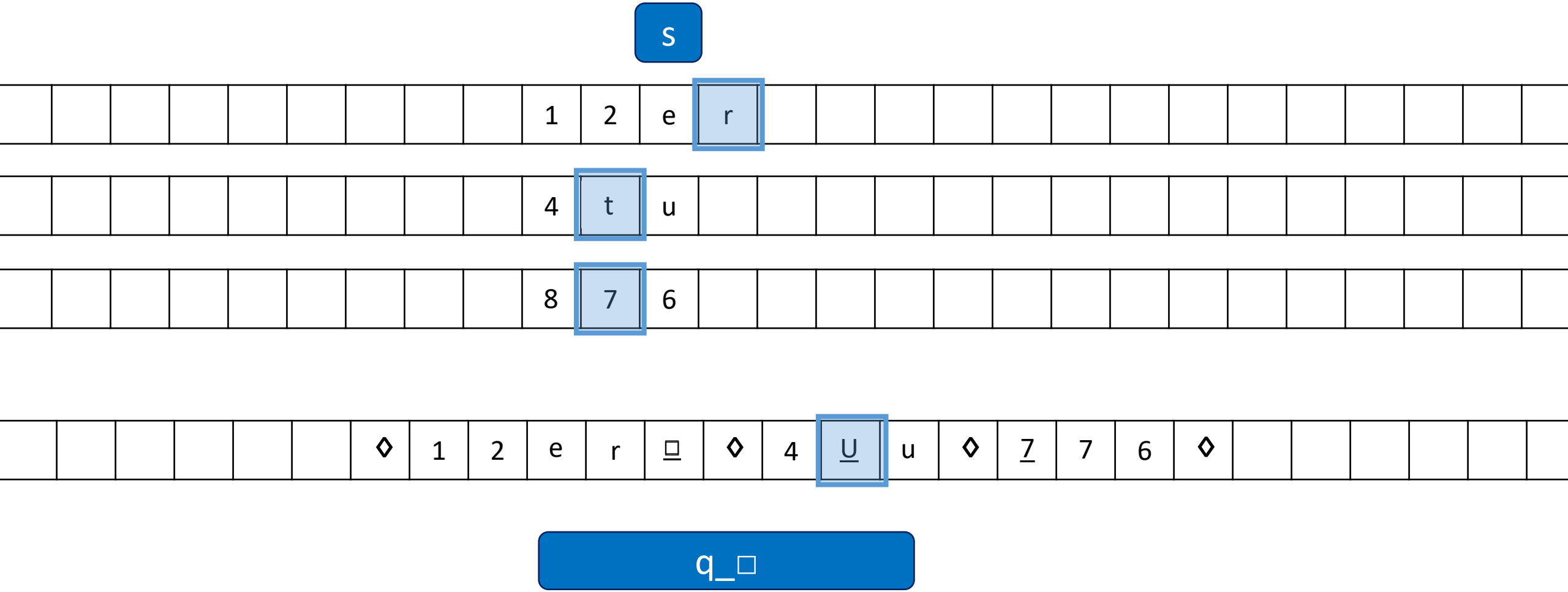

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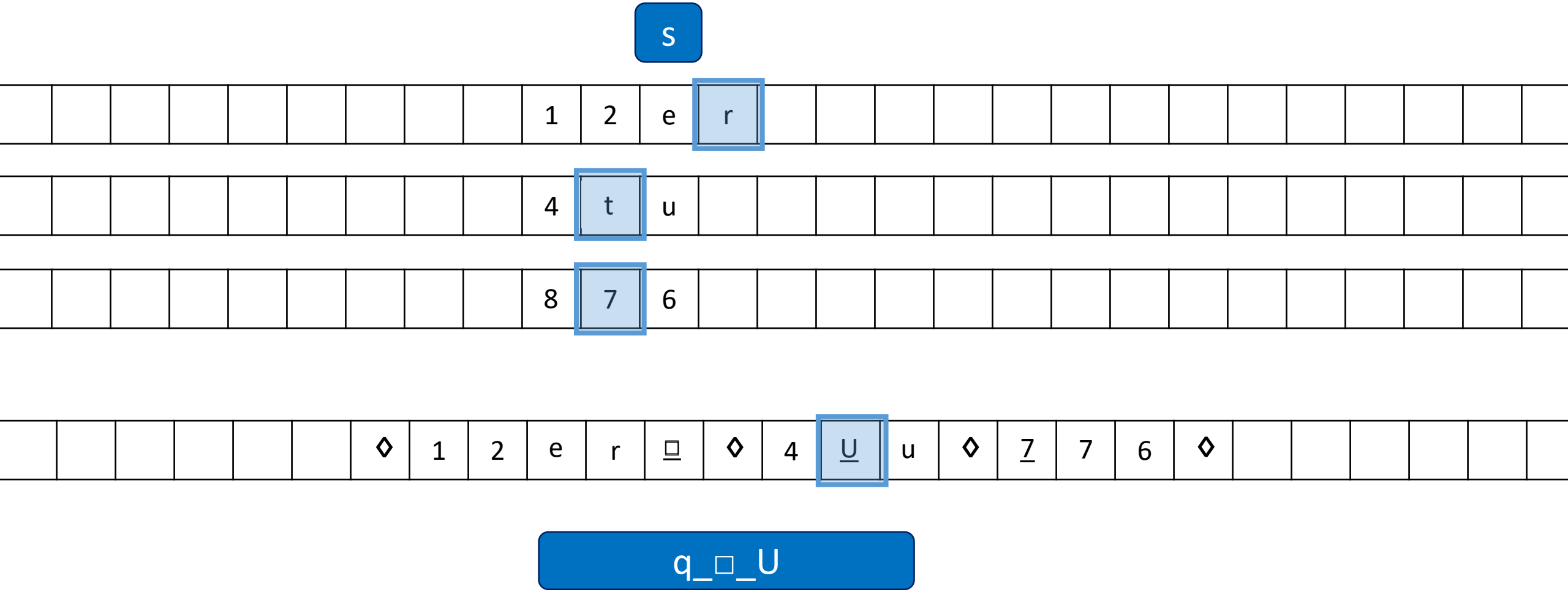

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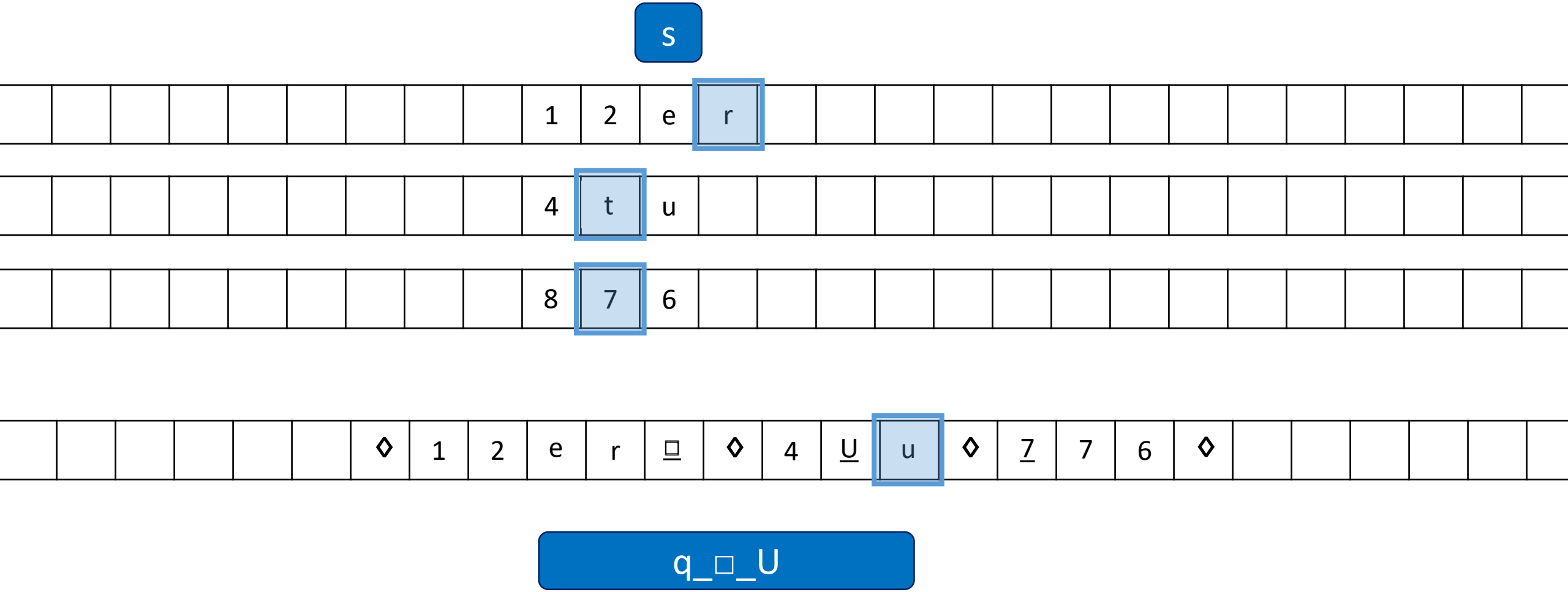

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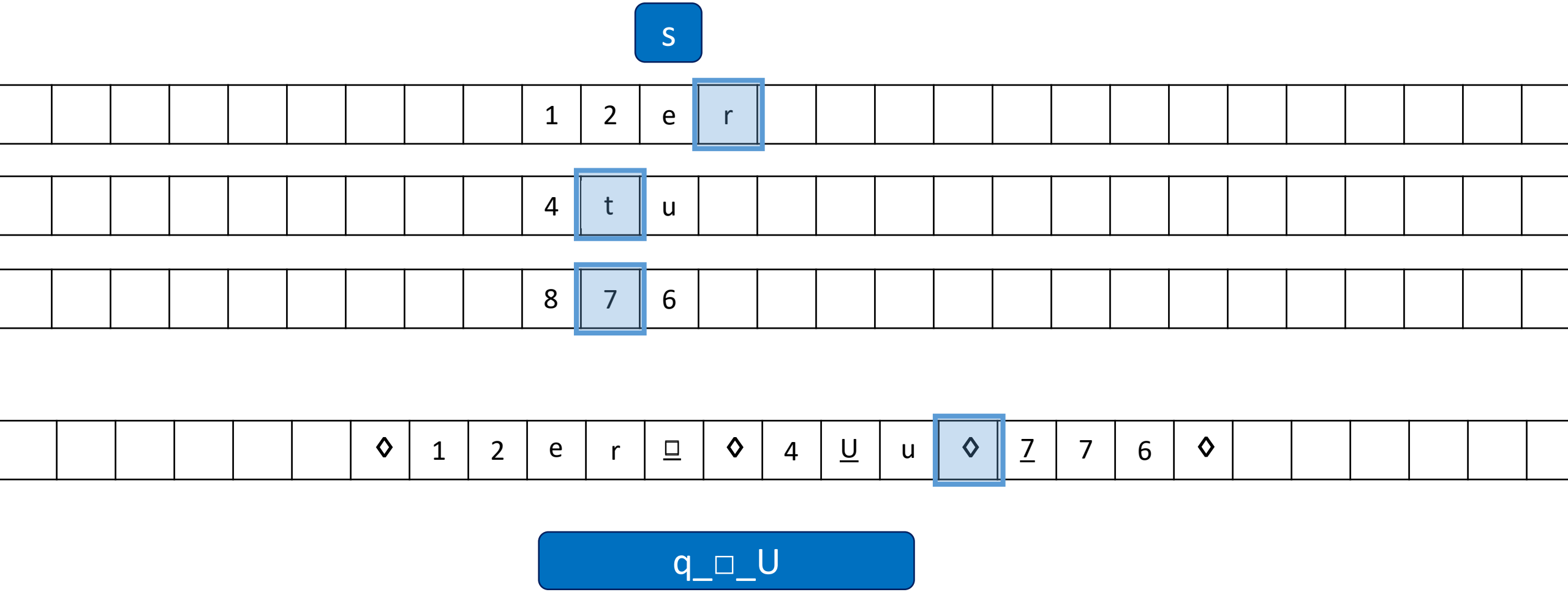

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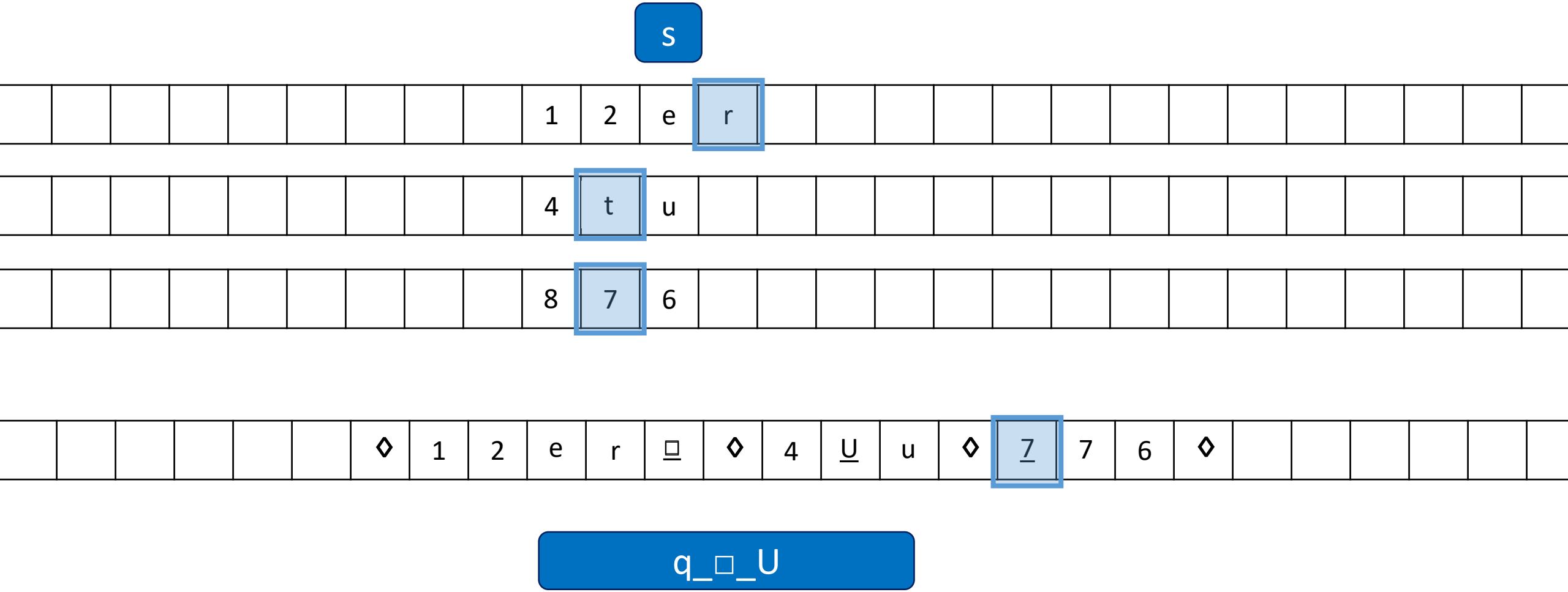

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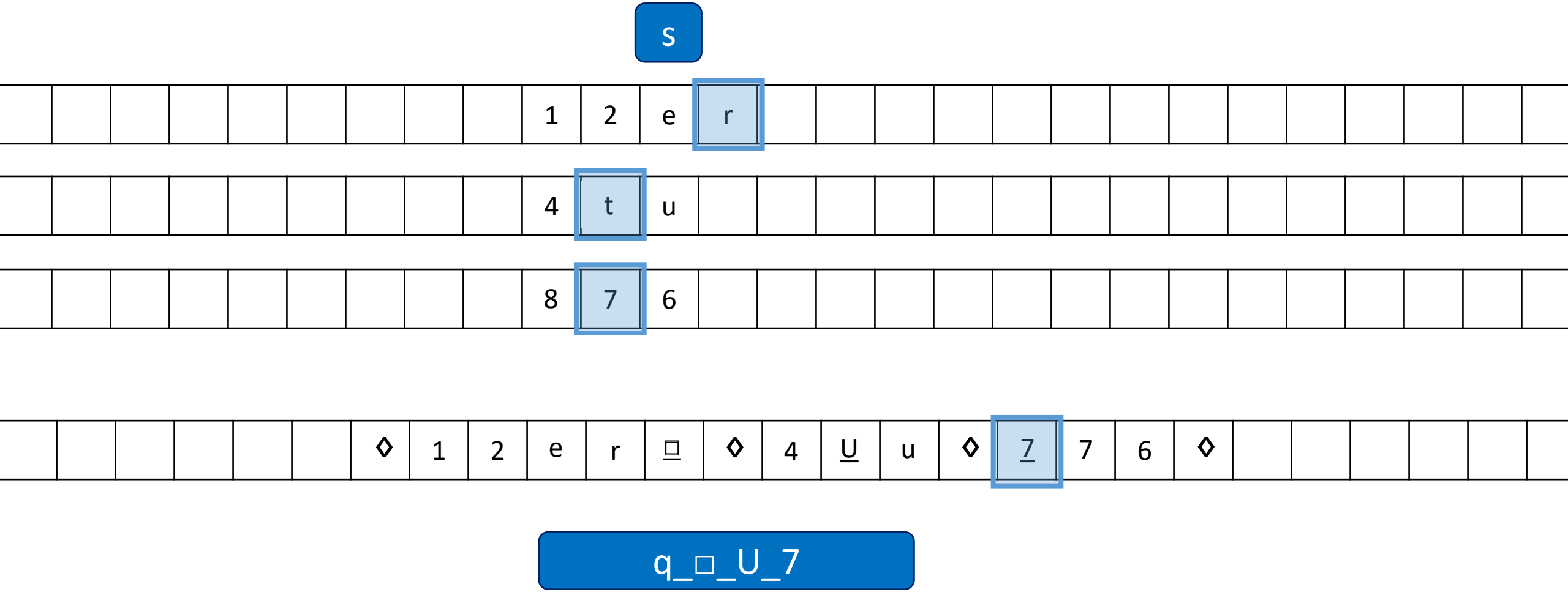

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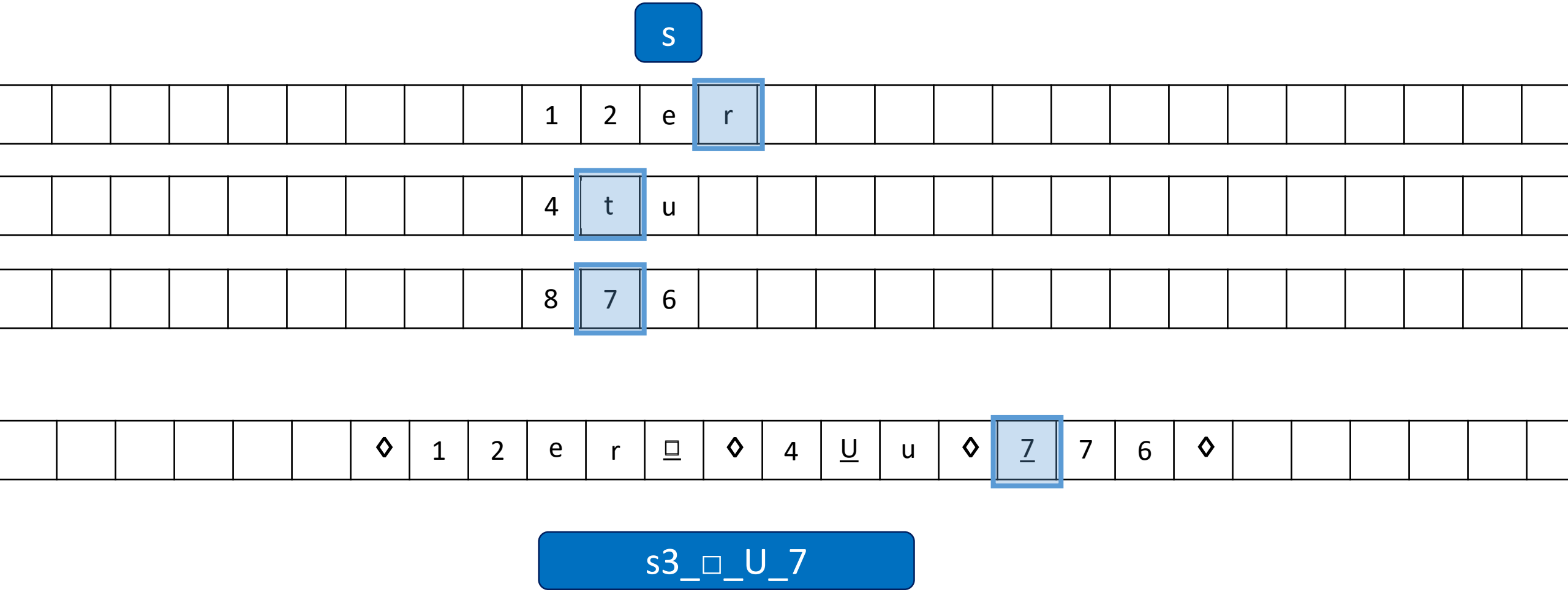
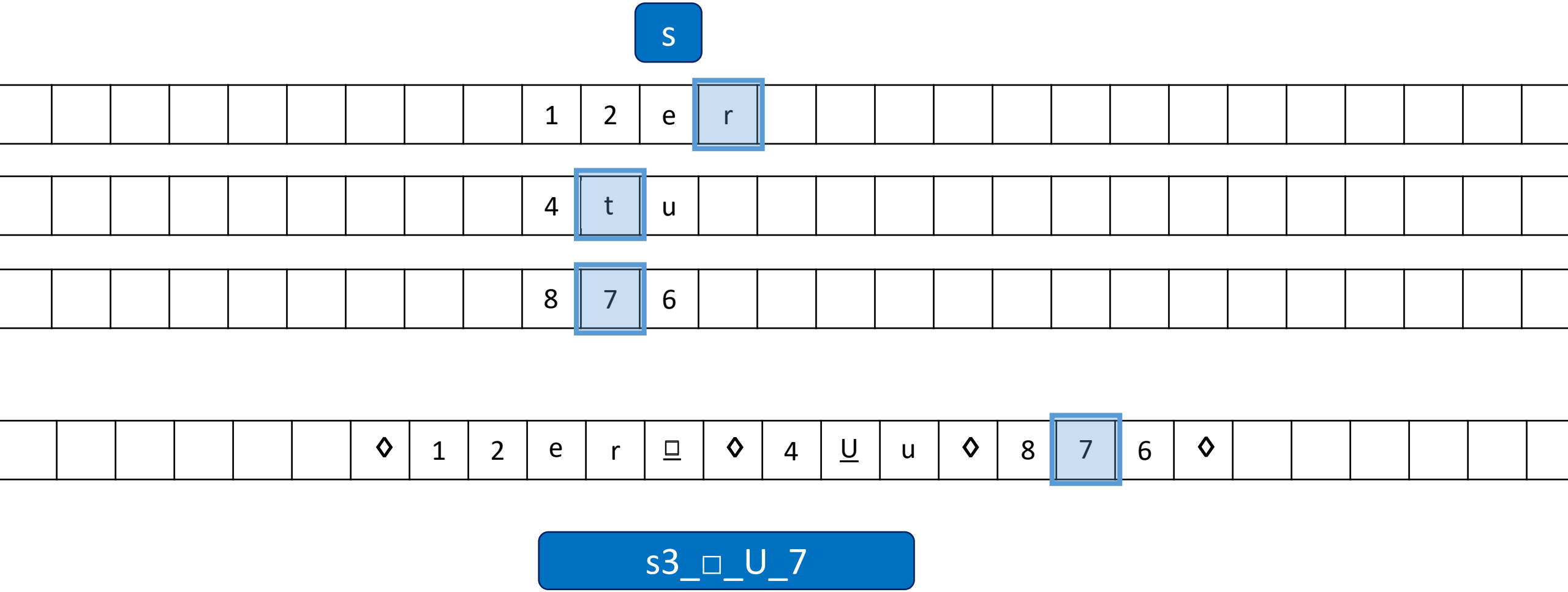


Single tape simulation



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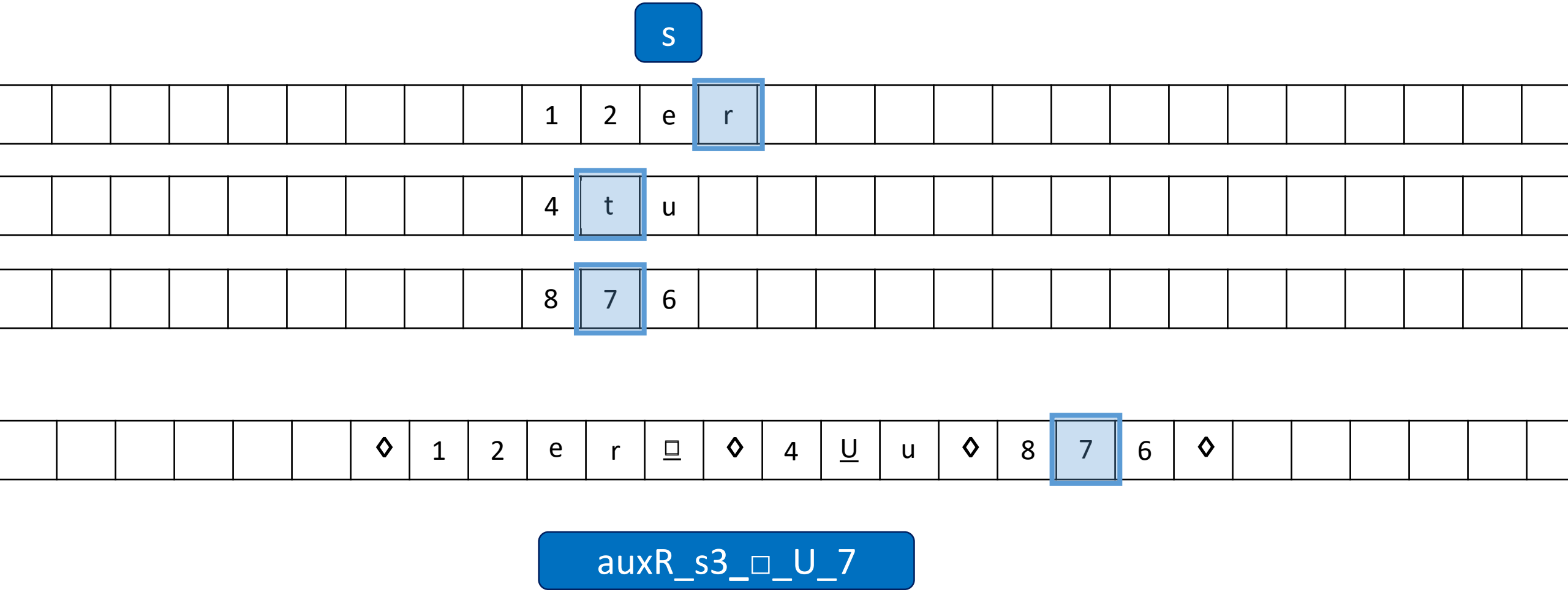

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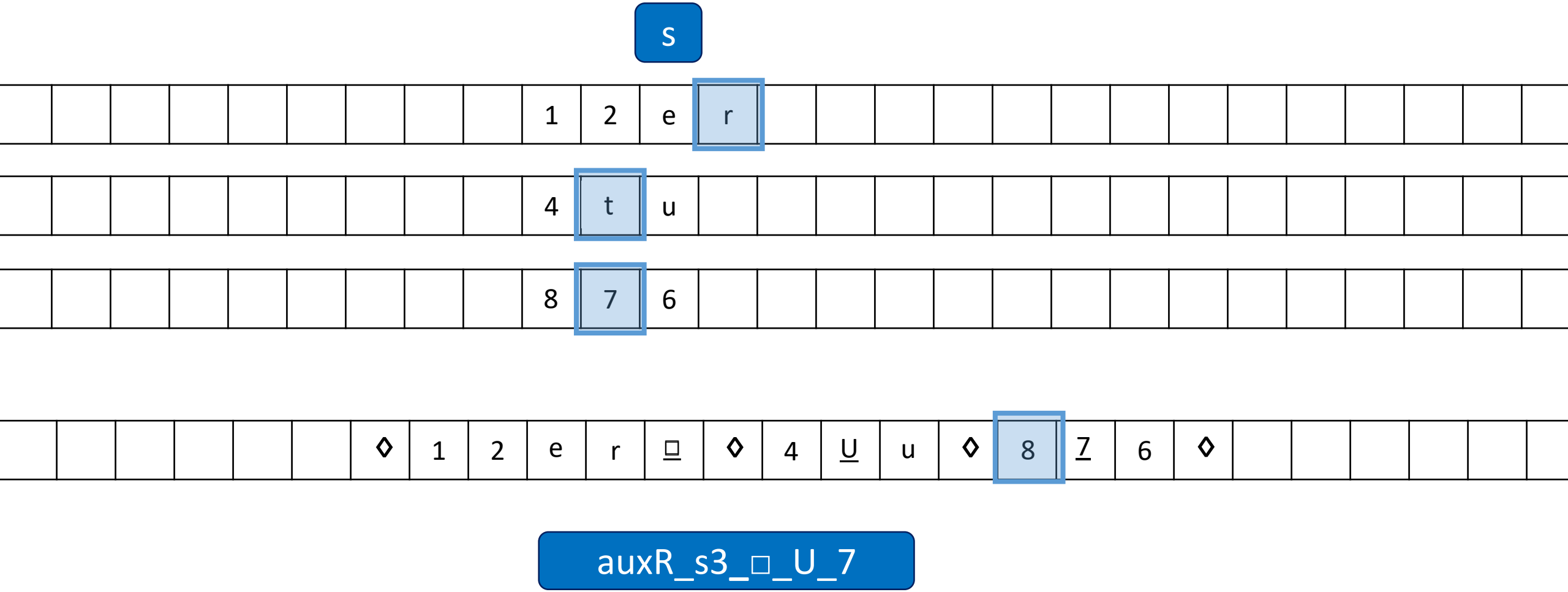

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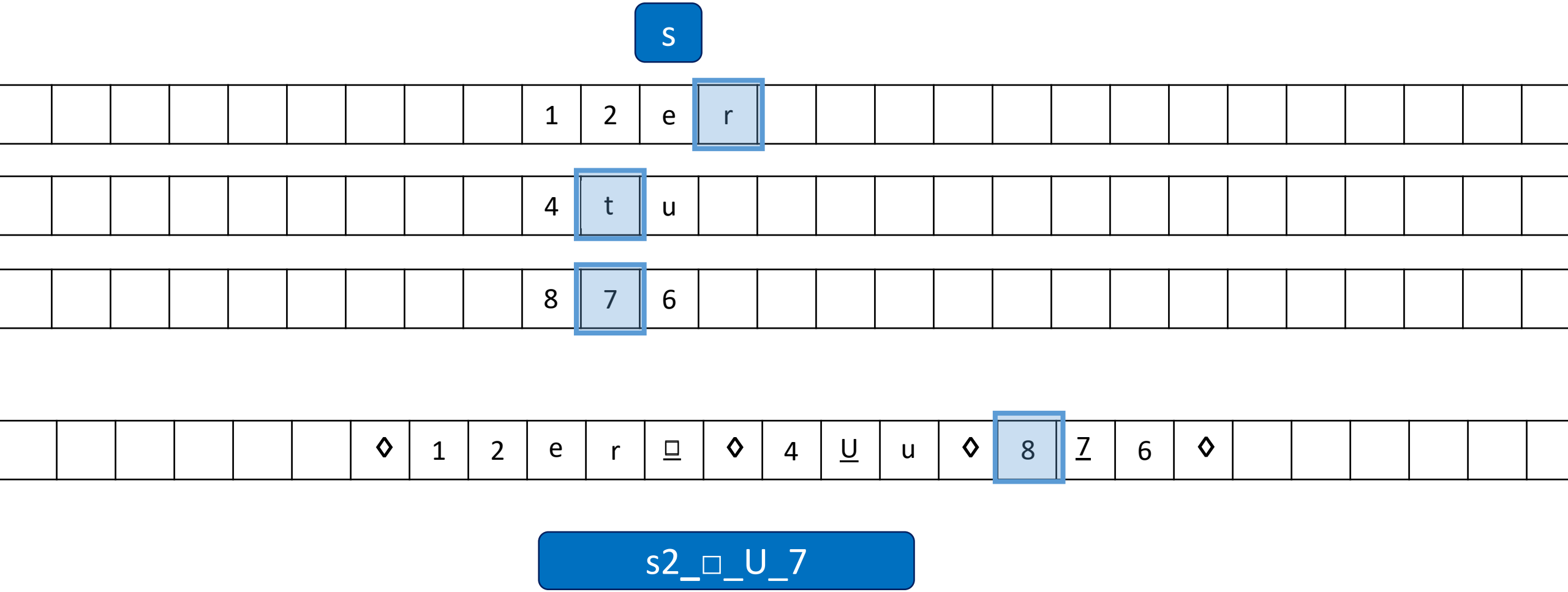

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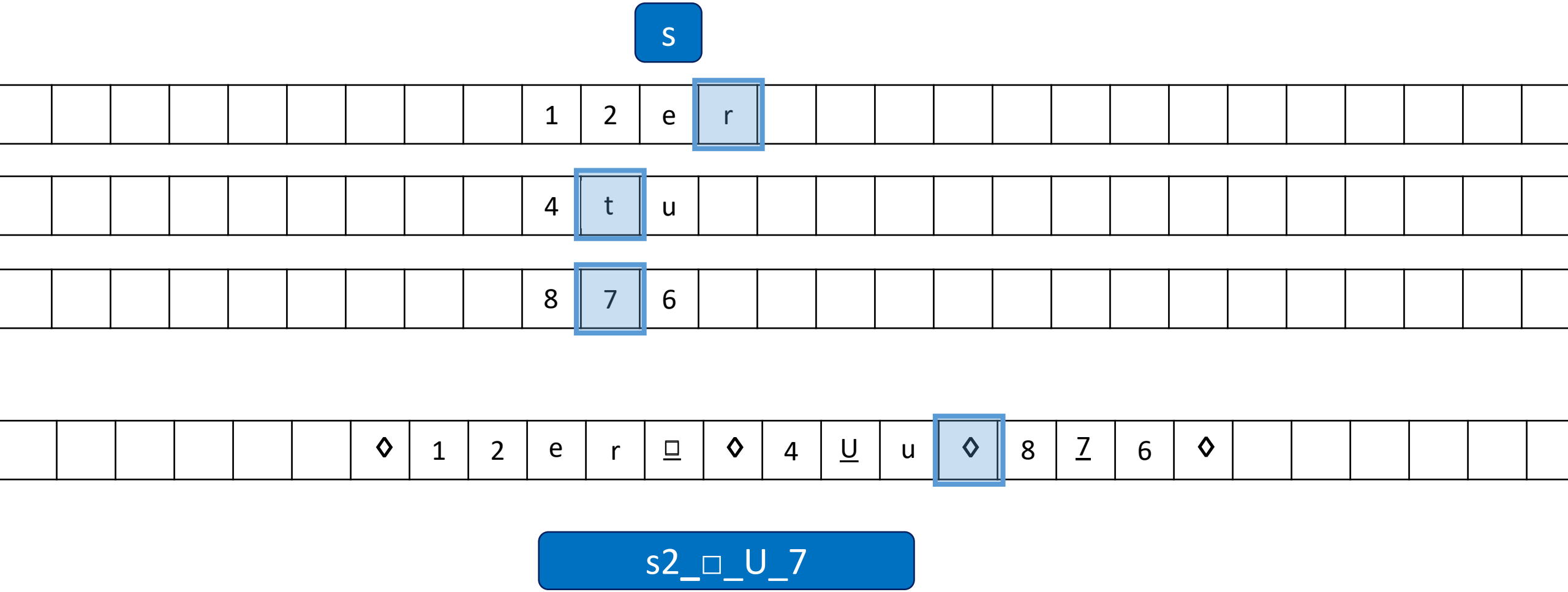

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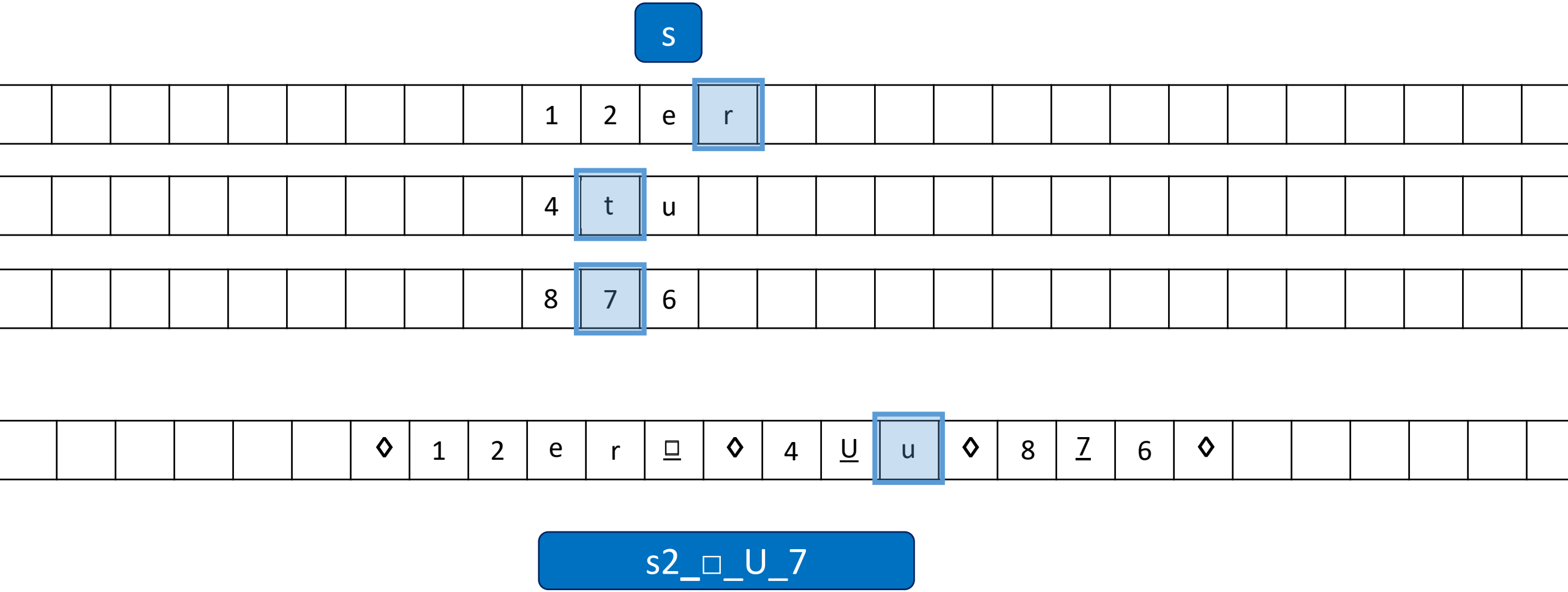

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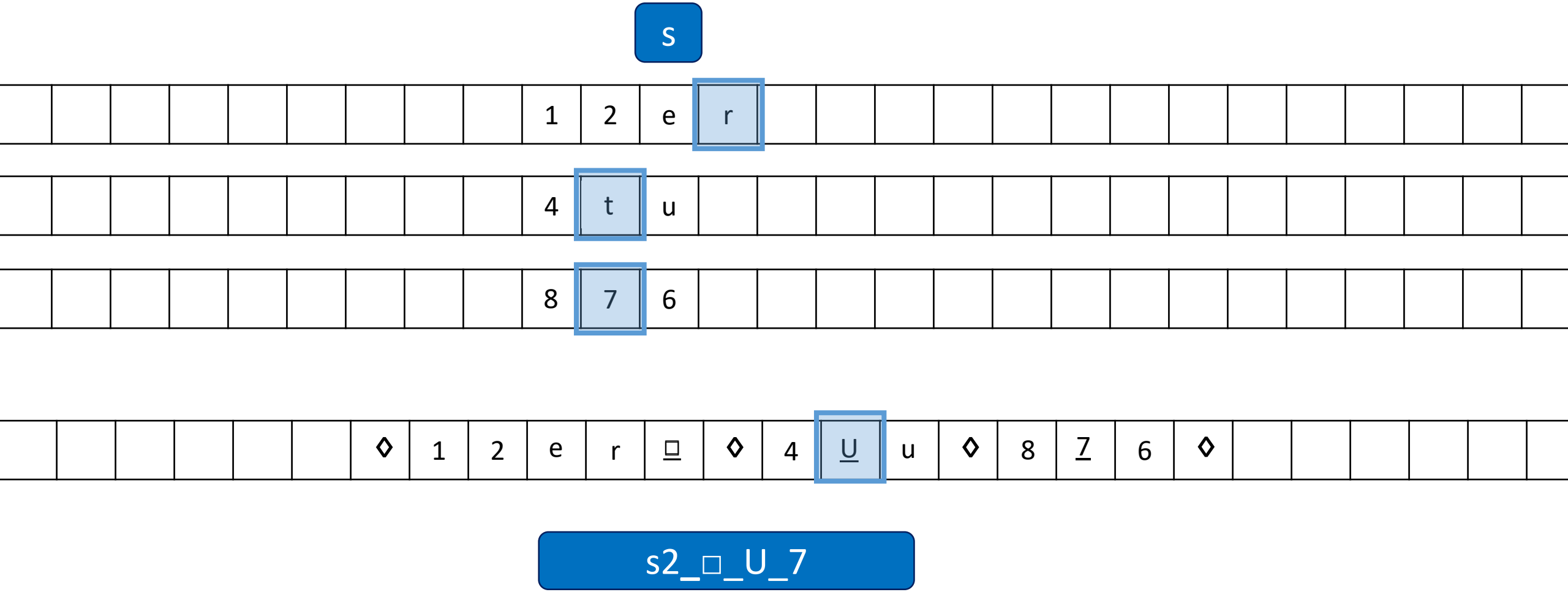

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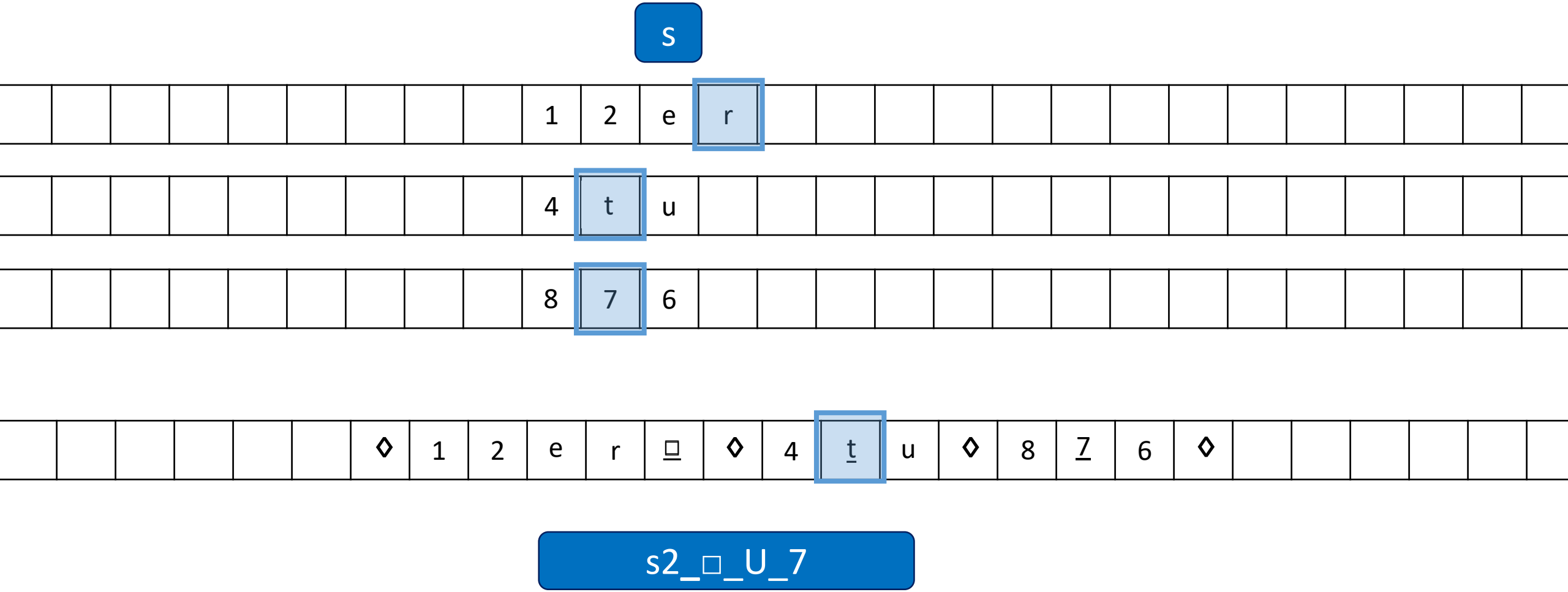

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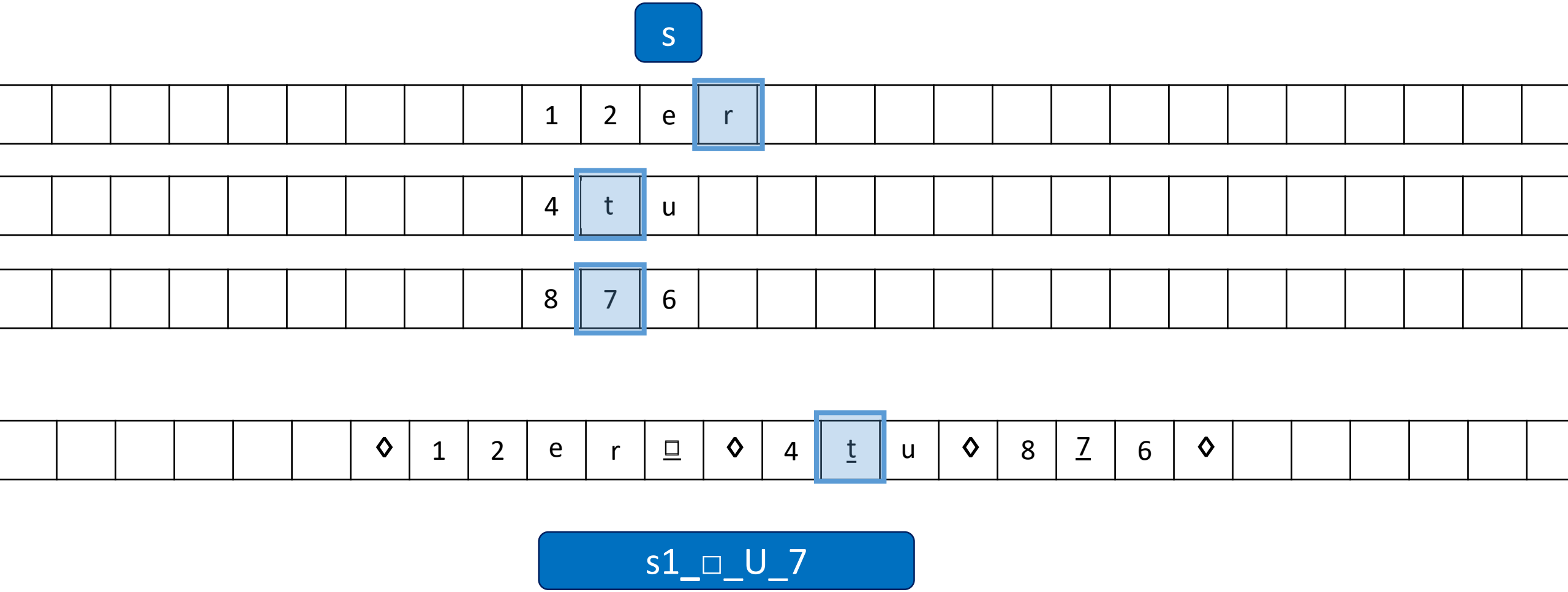

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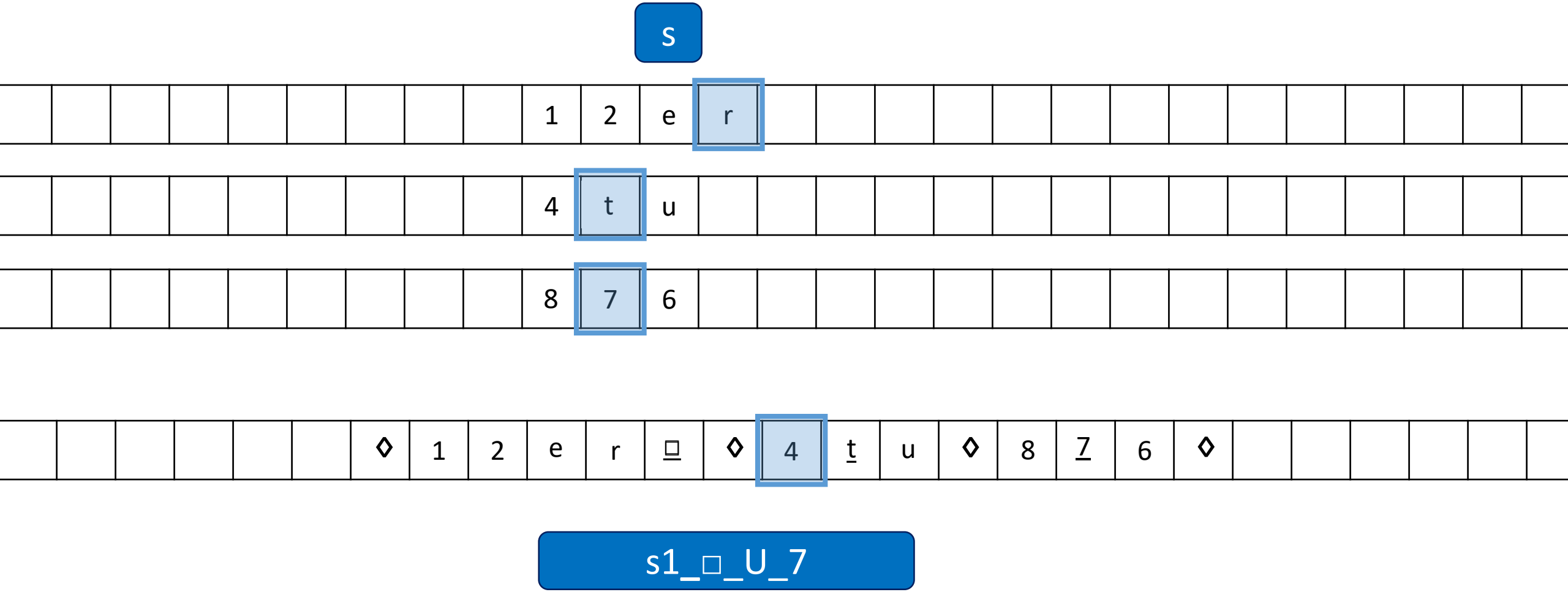

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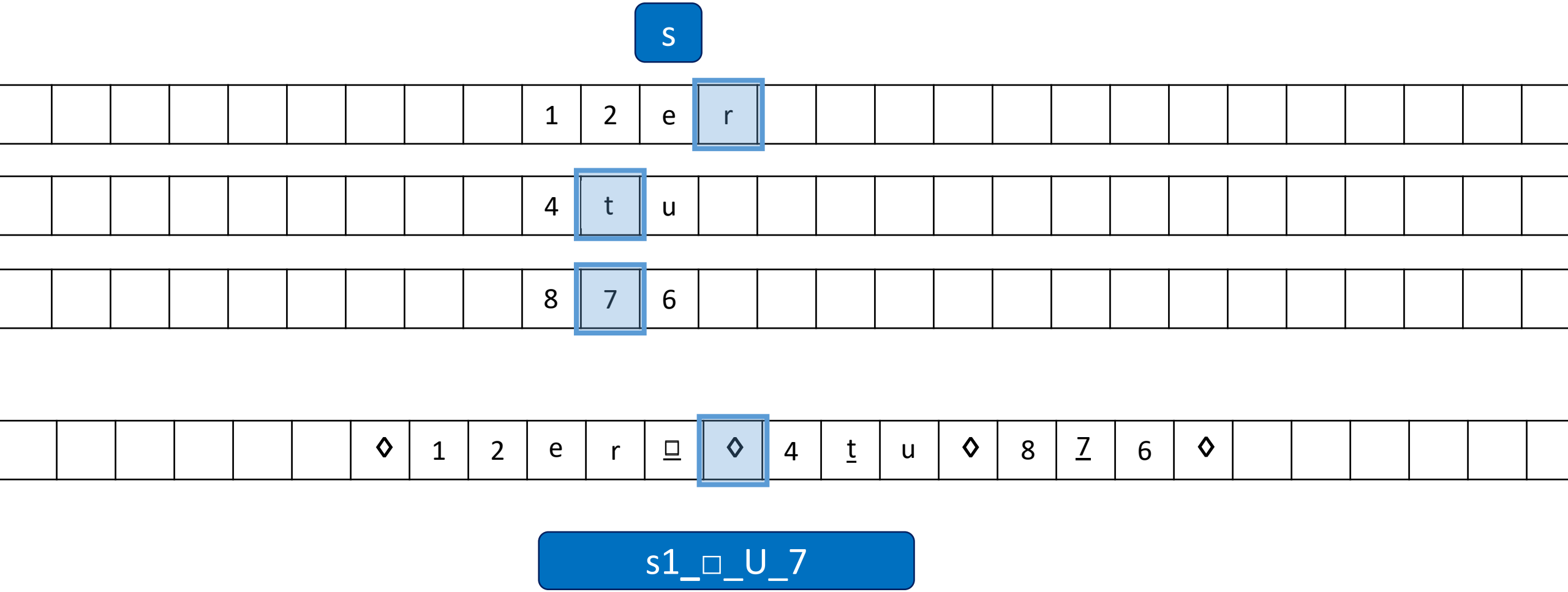

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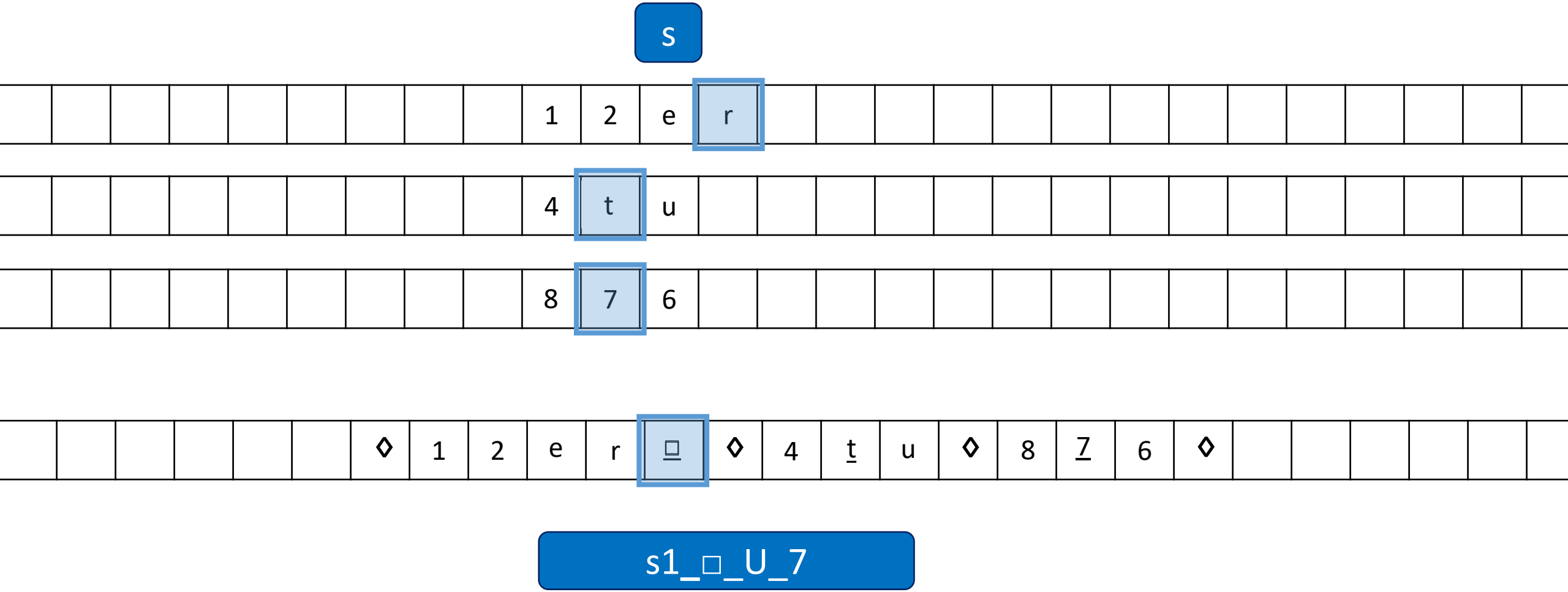

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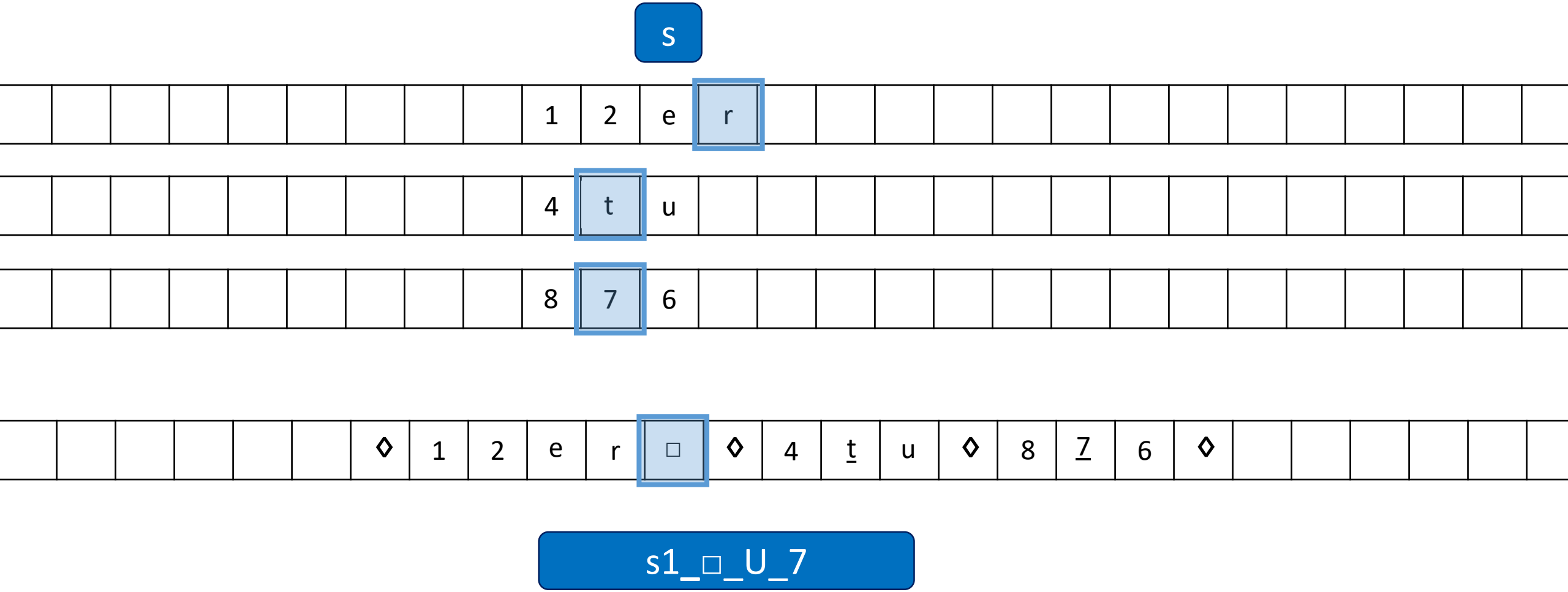

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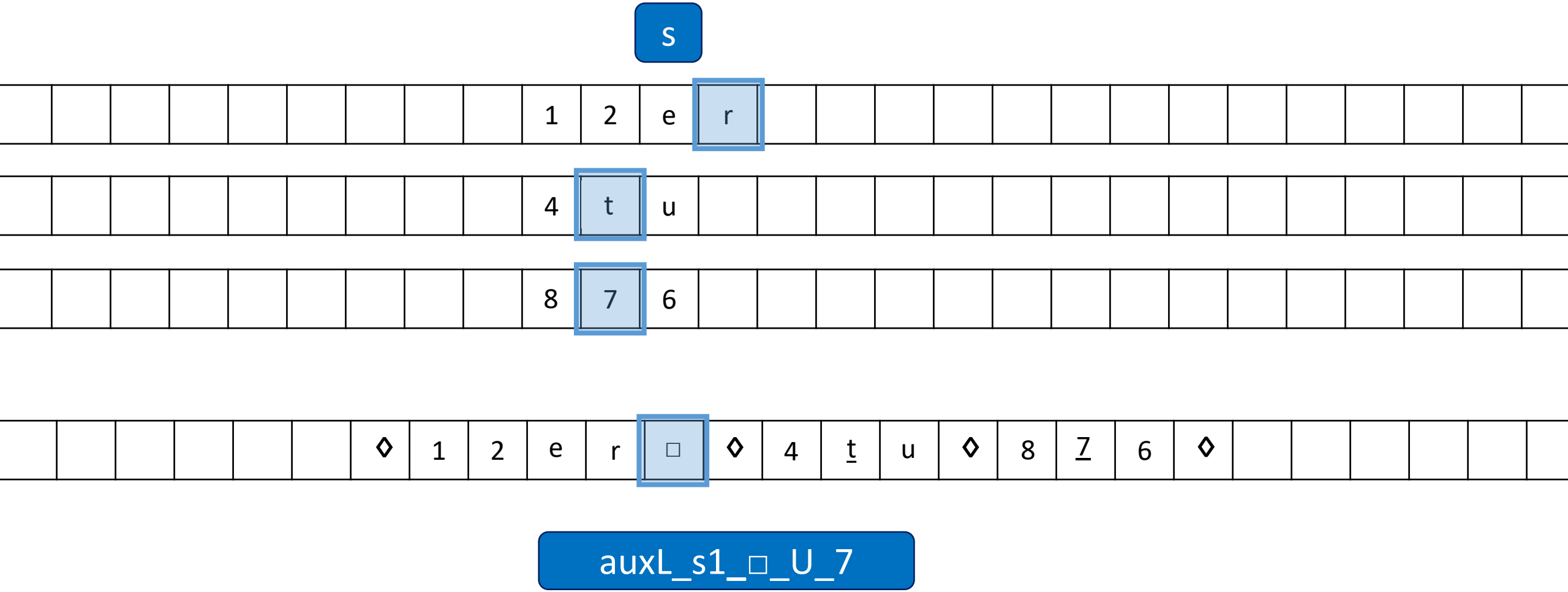

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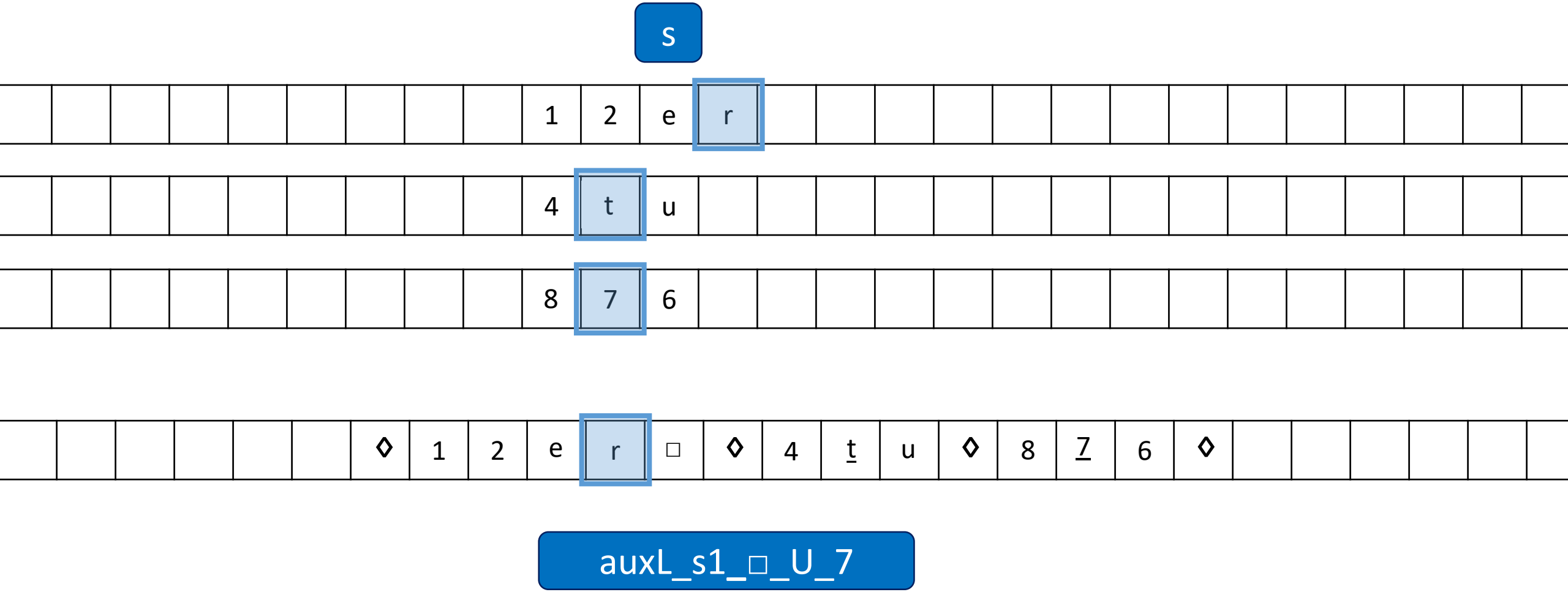

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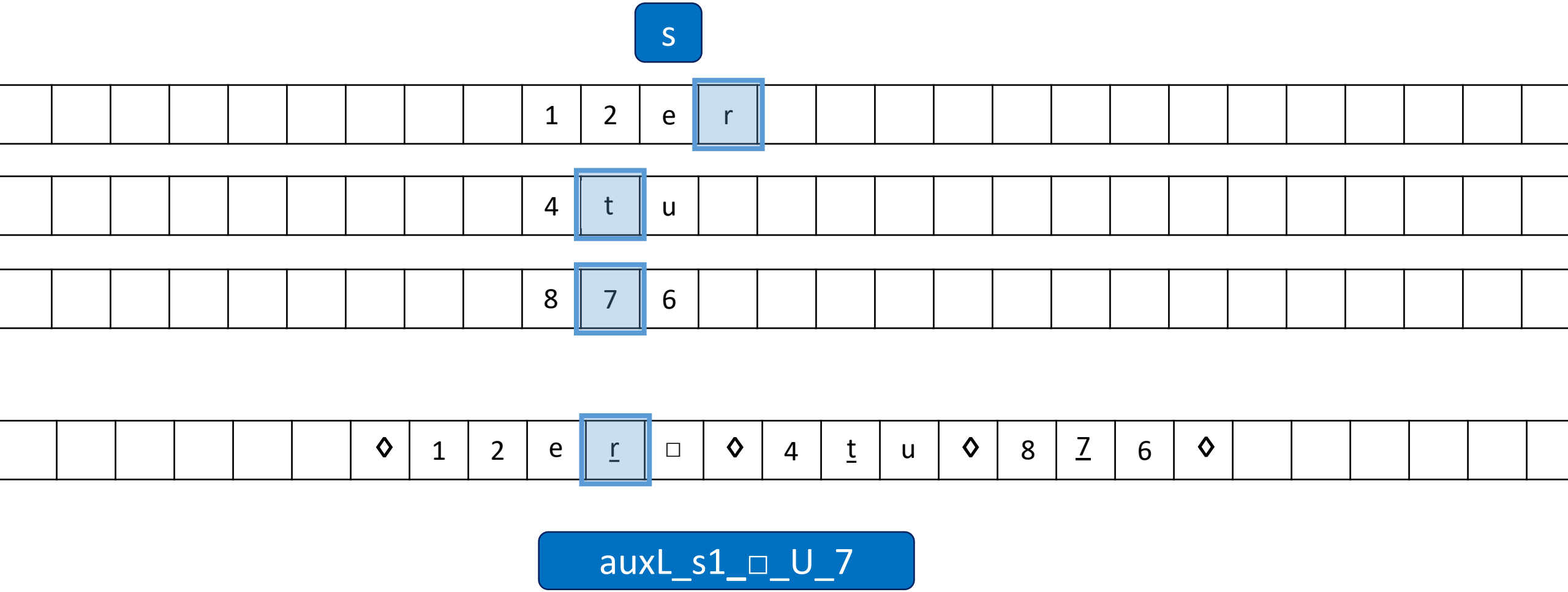

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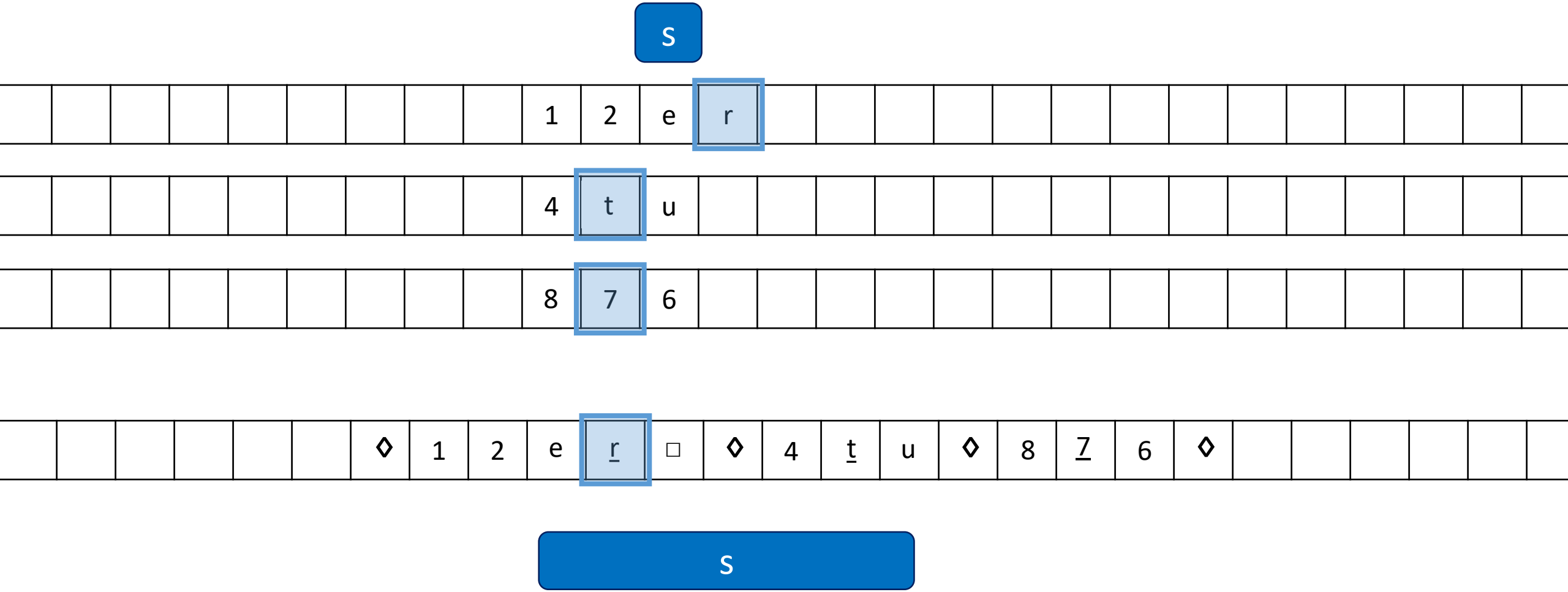

Why multitape machines?

- Supports the Church-Turing thesis
- Simpler definition for Universal Turing Machines (coming up next!)
- Easier to understand “linear speed-up” (justifies O notations)
- Necessary for defining space complexity

Moodle Quiz

Multitape Machines