

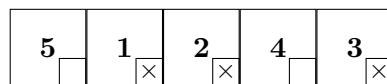
**Exercise for *Datenbanksystemimplementierung*
WiSe 2020/21**

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<https://dbis1.github.io/courses/ws20/dbimpl/>

Sheet Nr. 01

Exercise 1

The following shows the internal state of a buffer manager, which manages its free space using the **Second Chance** buffer replacement strategy. It can hold a total of **five** pages in memory, before it needs to evict another page.



The illustration shows the PageNo in bold with the second chance marker in the bottom right corner of each page. Assume that no pages are fixed in the initial state. Execute the following actions on the buffer manager and trace the internal state.

- `fix(1)`
- `fix(5)`
- `unfix(1)`
- `fix(6)`
- `fix(1)`
- `unfix(1)`
- `unfix(5)`
- `fix(7)`
- `unfix(6)`
- `fix(1)`
- `unfix(7)`
- `unfix(1)`
- `fix(4)`
- `unfix(4)`

How many page faults did this strategy produce?

How often were we successful in caching the correct page?