

Übungsblatt 03 - Aufgabe 1 - Synchronisation

I

```
1 global int i = 1;
2 global mutex a = false;
3 global mutex b = true;
```

A

```
4  while(i < 4) {
5      down(a)
6      i = i / 2 + 2
7      up(b)      }
```

B

```

8  while(i < 4) {
9      down(b)
10     i = i + 1
11     up(a)      }

```

Zeile

The diagram illustrates the FCFS-Warteschlange (First-Come-First-Served queue) with three parts: i, a, and b.

i shows a sequence of 16 tasks, each with a duration of 1 unit. The tasks are represented by a row of 16 boxes, with the first three boxes labeled 1, 2, and 3.

a shows the state of the queue after the first three tasks have been processed. The queue is represented by a grid of 16 columns and 2 rows. The first three columns are labeled "free" and "queue". The first three columns of the "queue" row are labeled 1, 1, and 1, indicating that the first three tasks have been processed and are now in the queue.

b shows the state of the queue after the first three tasks have been processed. The queue is represented by a grid of 16 columns and 2 rows. The first three columns are labeled "free" and "queue". The first three columns of the "queue" row are labeled t, indicating that the first three tasks have been processed and are now in the queue.

FCFS-Warteschlange shows the state of the queue after the first three tasks have been processed. The queue is represented by a grid of 16 columns and 3 rows. The first three columns are labeled I, A, and A. The first three columns of the second row are labeled A, B, and B. The first three columns of the third row are labeled B, indicating that the first three tasks have been processed and are now in the queue.