

## Answers for Session 5

Group 00:

Stephan Holljes

Yannick Keller

Tim Buecher

*Ex.: 1*

a) 190 cycles (sum of 0..20)

b) One reason for less memory accesses in the array version is keeping the current value to sort into the array as a separate variable. The index version accesses the value from the array in the comparison step and therefore has to fetch it from memory again. Another is that the values to swap are not taken from memory but are already present on the stack and can therefore be written directly to the array.

index: 2 R + (2 R, 2 W) addr: 1 R + (2 W)

8) a) Cycles: 11431 (dlxsim) 11461 12441 eltu + bnz replaced by bgtu:  
11012