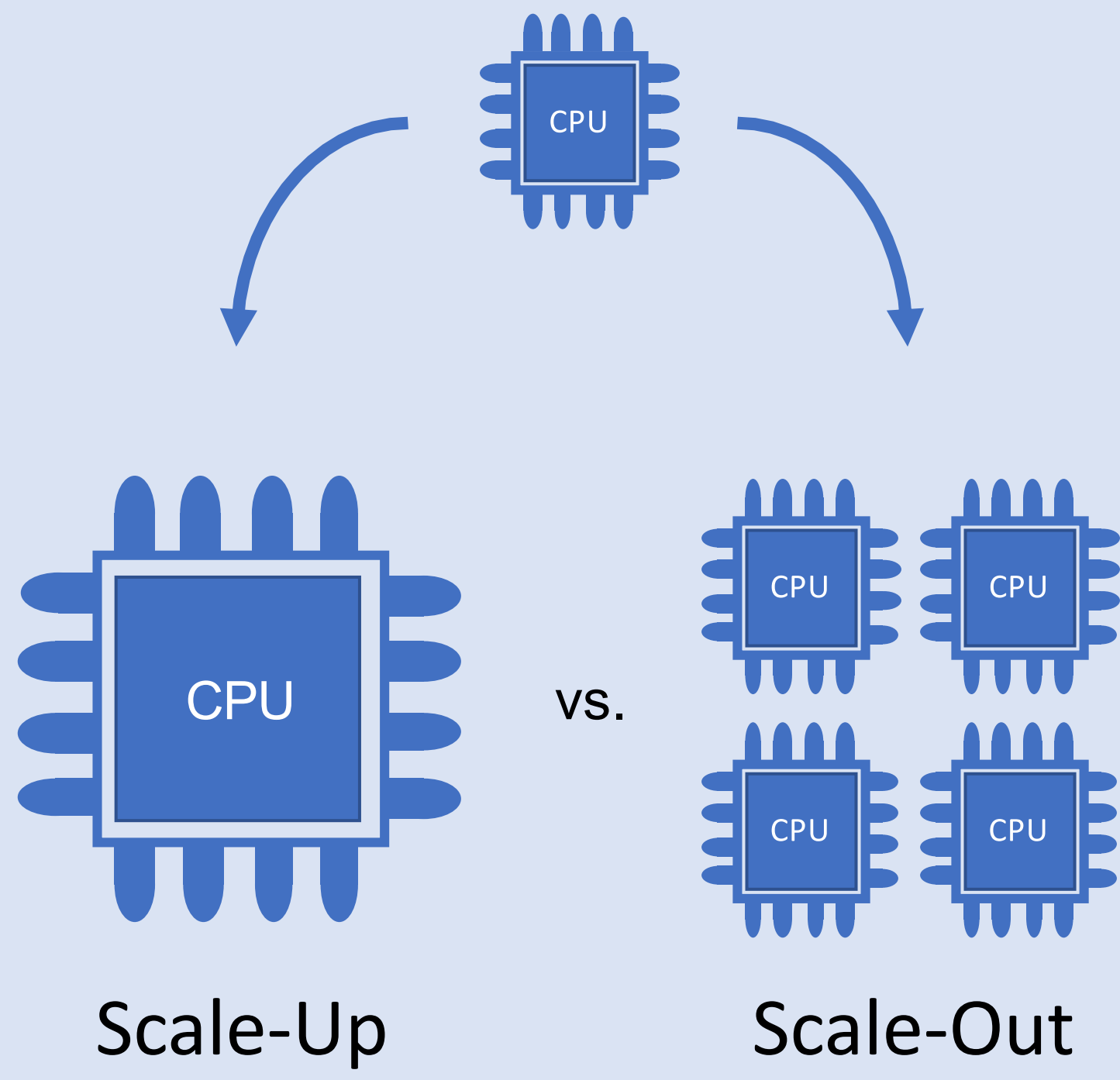
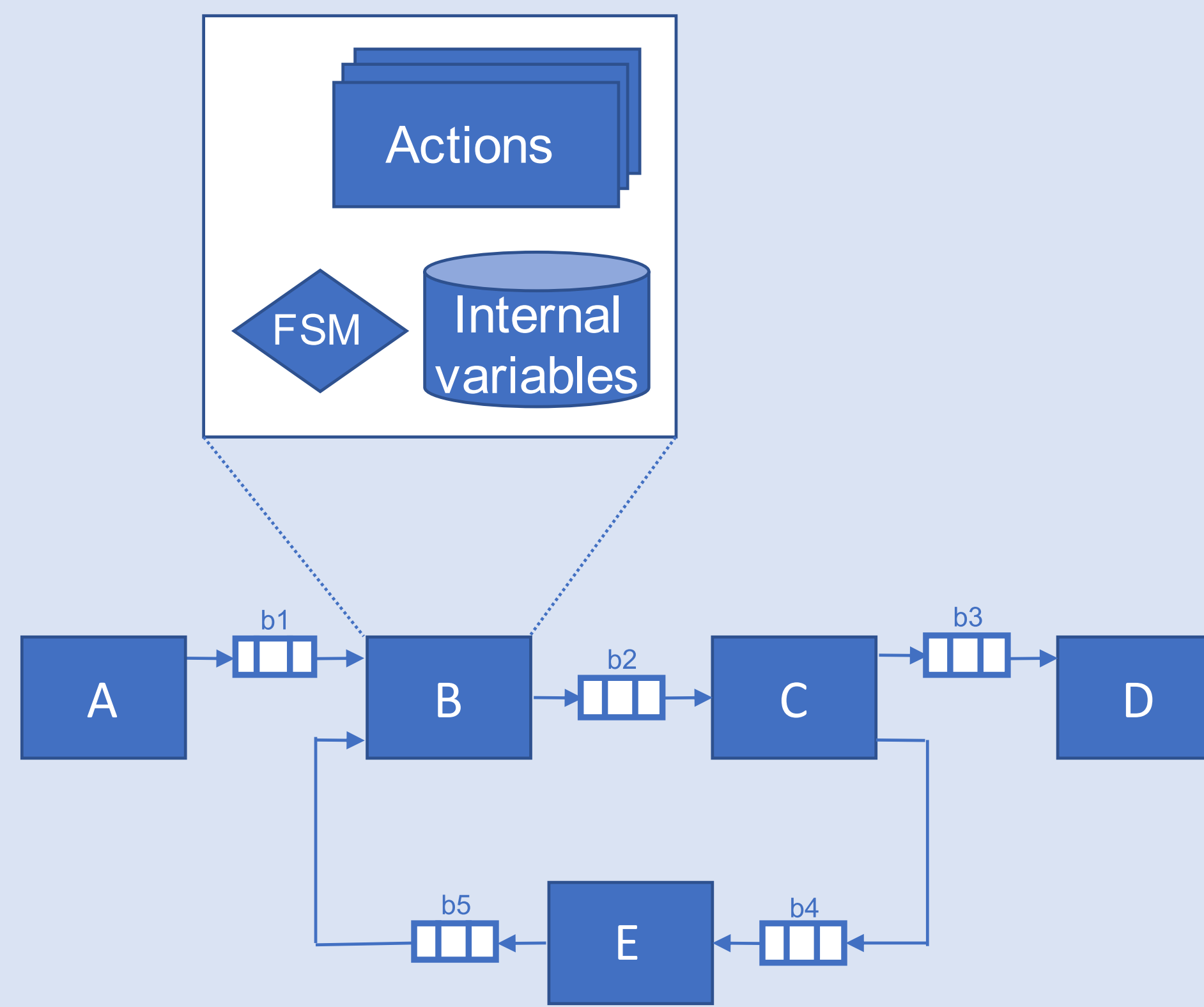


Introduction



- New challenges in software design
- Portability of applications
 - Abstracting massive parallelism

Dataflow model of computation



Tool: ORCC

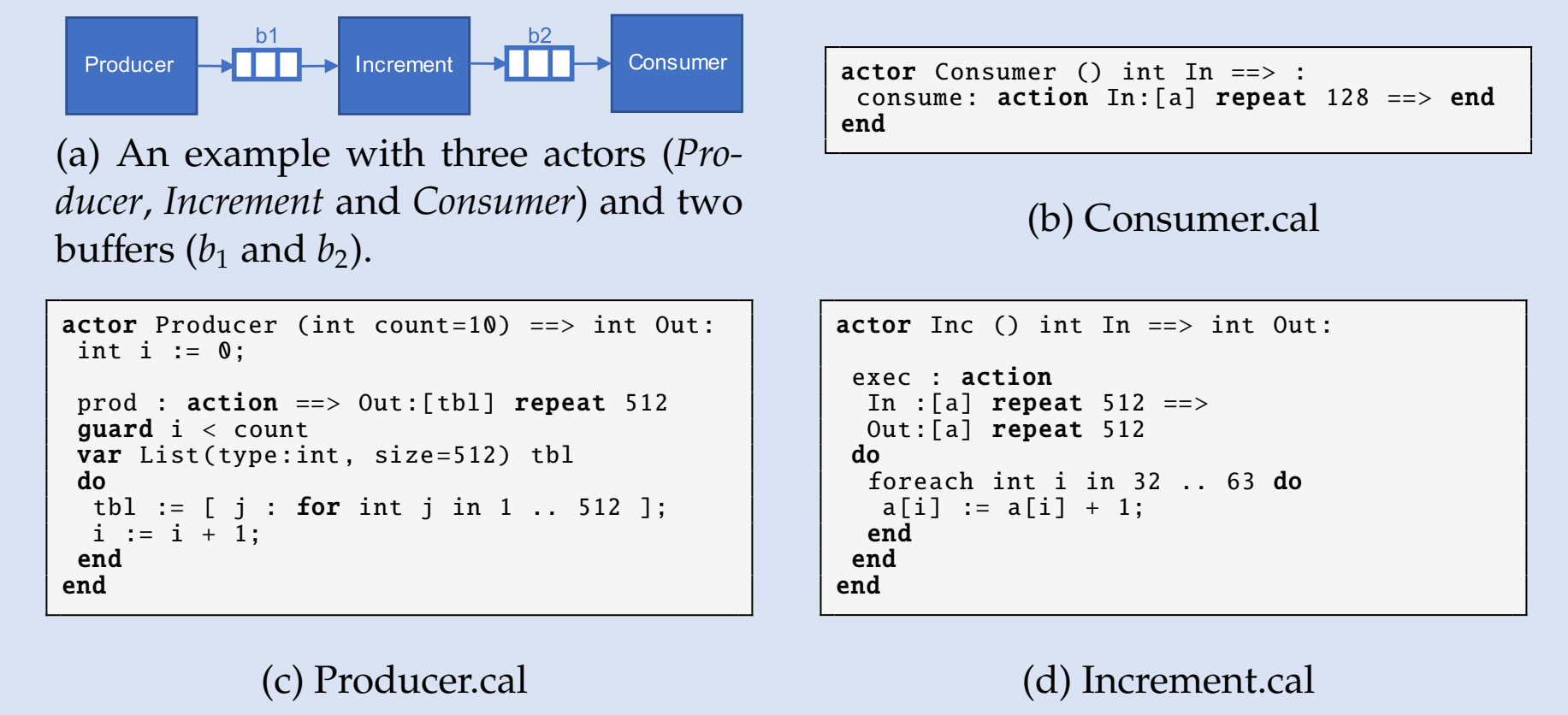


Fig. 1: RVC-CAL program example: dataflow network topology and actors source code.

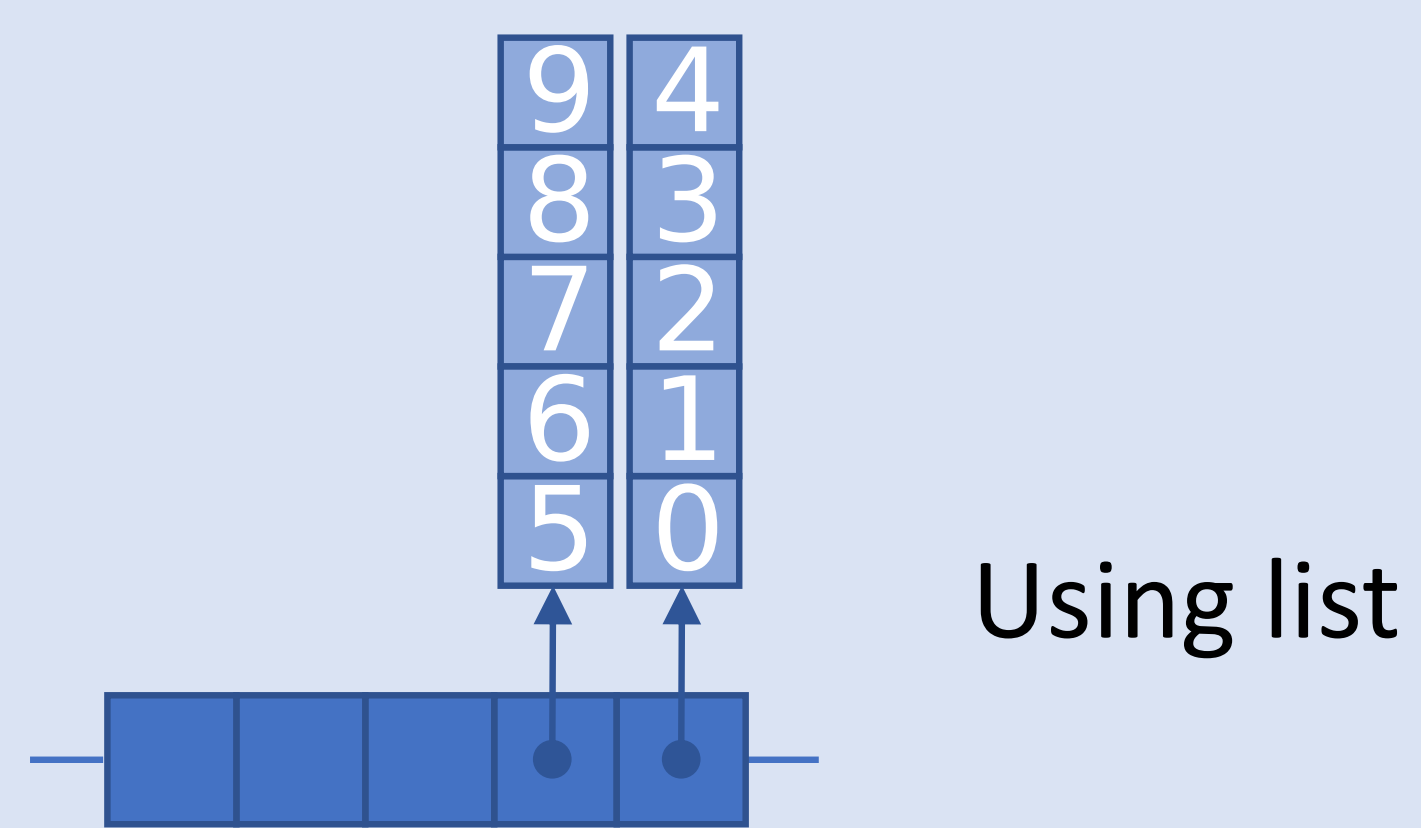
Problem statement

For shared memory architecture a lot of unnecessary copies are generated

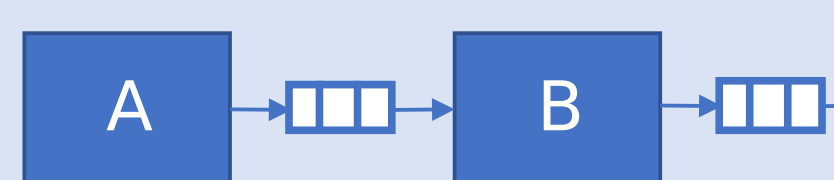
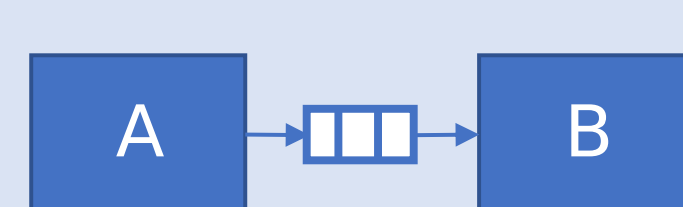
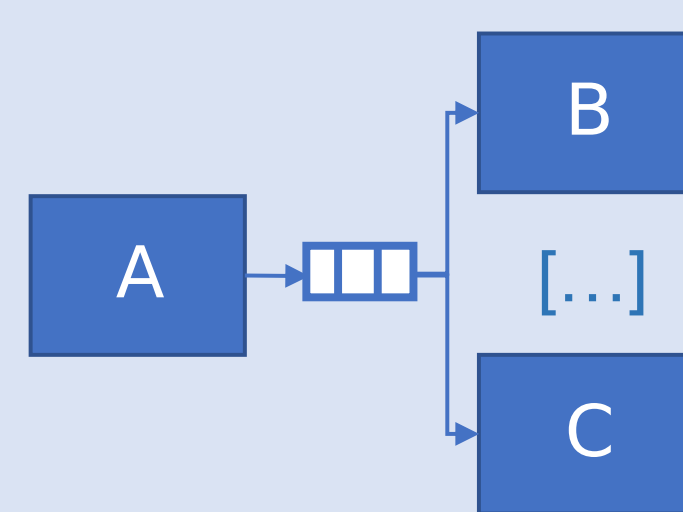
Design proposition

Composite data types

- Introduce composite data types such as *list* to represent actions firing
- e.g. two firings of five integers



Buffer identification



Implementations

Fully dynamic solution

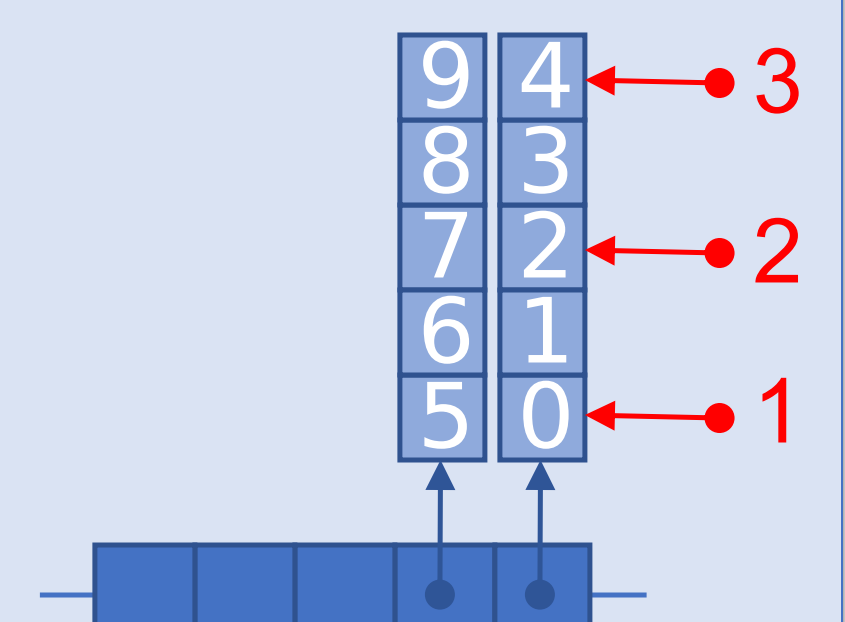
- Consume data at any rate

Semi dynamic solution

- Consume data of a size dividing an entire chunk

Static solution

- Always consume an entire chunk



Conclusions

- Tradeoff between memory copy and memory allocation
- Not beneficial for all applications

Future work

- Automatic selection of the appropriate implementation
- Integration in TURNUS framework