How to make stream processing more mainstream

Shuvra S. Bhattacharyya University of Maryland

Gordon Brebner, *Jörn W. Janneck* Xilinx

Johan Eker Ericsson

Marco Mattavelli EPFL

Mickaël Raulet INSA Rennes

a cornerstone of sequential computing

Programmers

Compiler Writers

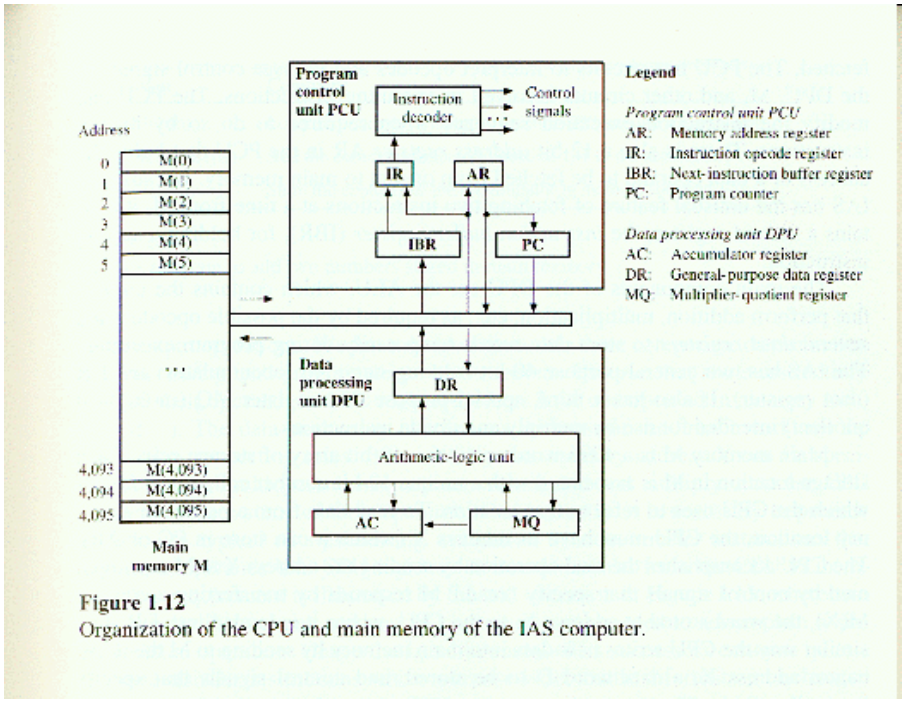
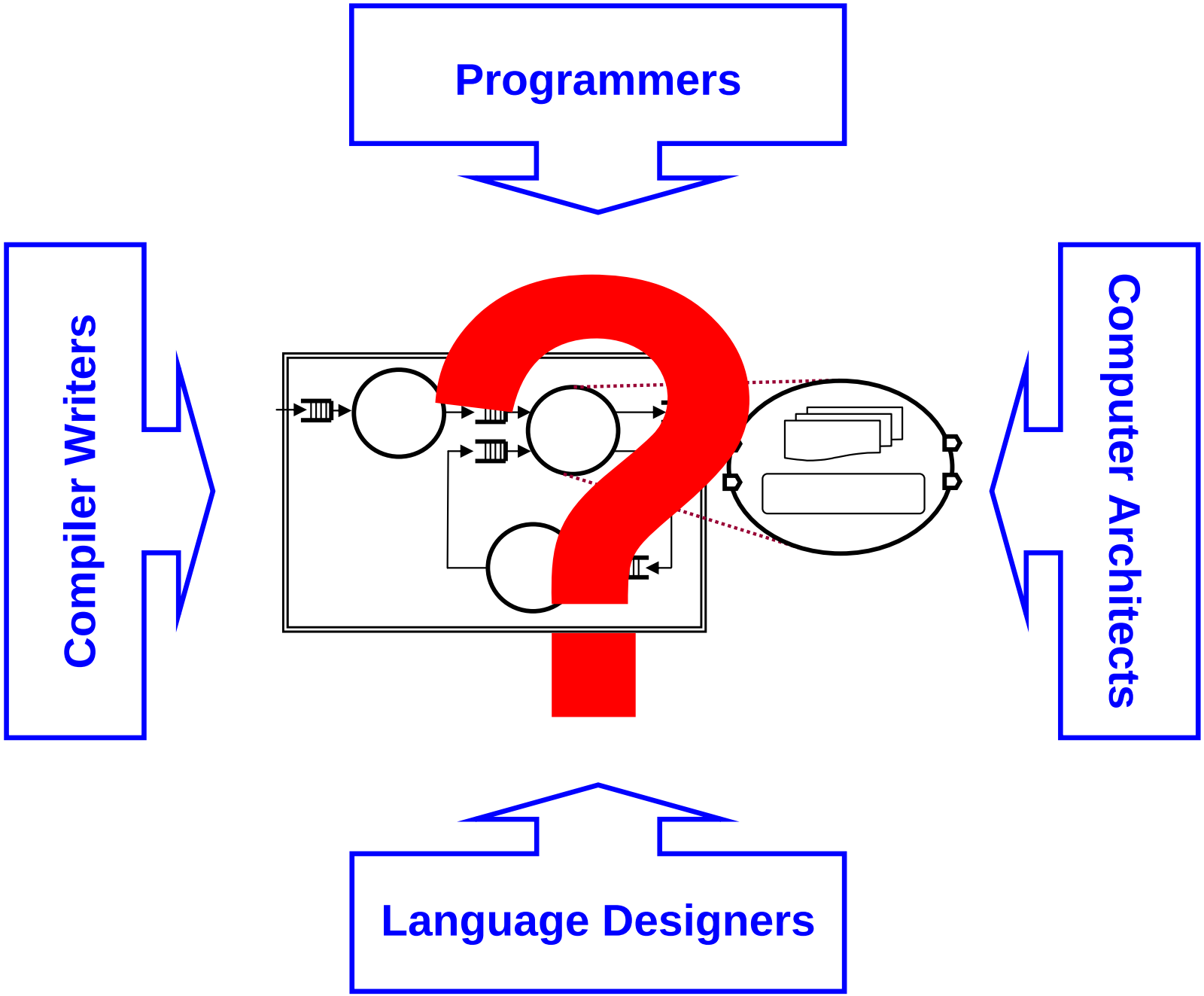


Figure 1.12
Organization of the CPU and main memory of the IAS computer.

Computer Architects

Language Designers

What is the “von Neumann model” of *stream processing*?



some desirable properties of such a model, and some claimed benefits

modularity, reuse

schedulabity

explicit concurrency

strong encapsulation

asynchrony, untimedness

user-defined transactions

adaptivity, virtualizability

portability

scalable parallelism

components/modules/abstractions as part of the model

boundaries of synchrony

explicit concurrency

strong encapsulation

asynchrony, untimedness

user-defined transactions

boundaries of sequentiality

scope of transactions

Thanks!

opendf.net