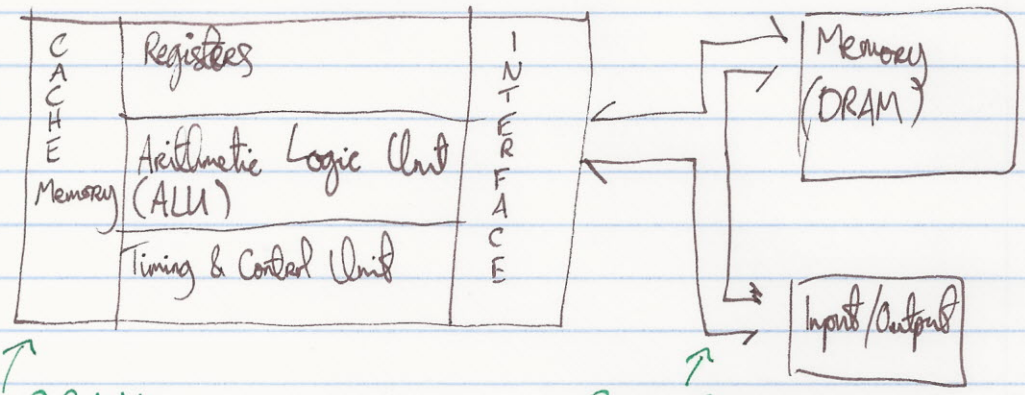
(S1110 Systems Organisation

16/11/2015

Computer Organisation

(Computer Organisation)

Central Processing Unit (CPU)



This is a microprocessor

Typically S.R.A.M.

System Bus (how the data flows)

This is faster than DRAM (it's made of flip-flops) but takes more space and is more expensive.

So data is organised in a hierarchy from slow mass storage (memory) to very fast local registers. Since the local memory is faster, we can then take full advantage of the speed of the ALU. Memory management controls what is kept local and tries to keep only relevant data there.

A microcontroller is a microprocessor which is connected to the outside world by sensors.
These are found everywhere in e.g. washing machines, household appliances.

Register Section

General Purpose (Data Registers)

- used to hold operands (results of operations
- how many? Tradeoff between space and max CPU efficiency
- how many bits/register? Depends, typically e.g. 32, 16 etc.