~~EMIS~~ 15/16 RESIT

1 a FETCH - DECODE - EXECUTE

b ISA is the entire processor from the programmer's point of view

c The key difference between RISC & CISC is the number of cycles each takes to complete an instruction
RISC faster but CISC more clock cycles per sec.

d Big endian means the MSB is read into the processor first .e

0 ... 1101 → into processer
MSB big endian

e jal jumps to linked address and stores program counter (address of current instruction) in the register $ra

f .align
.data etc are directives
used by assembler to know the type of a section of code.

g $P = \frac{1}{2} \times capacitance \times voltage^2$
$\Rightarrow P \propto V^2$

h ILP - Instruction Level Parallelism
(measure of how many operations can be performed simultaneously)

i Virtual memory ? Main memory

j Speculation - when processor assumes certain operations because it believes they will be needed in the future.

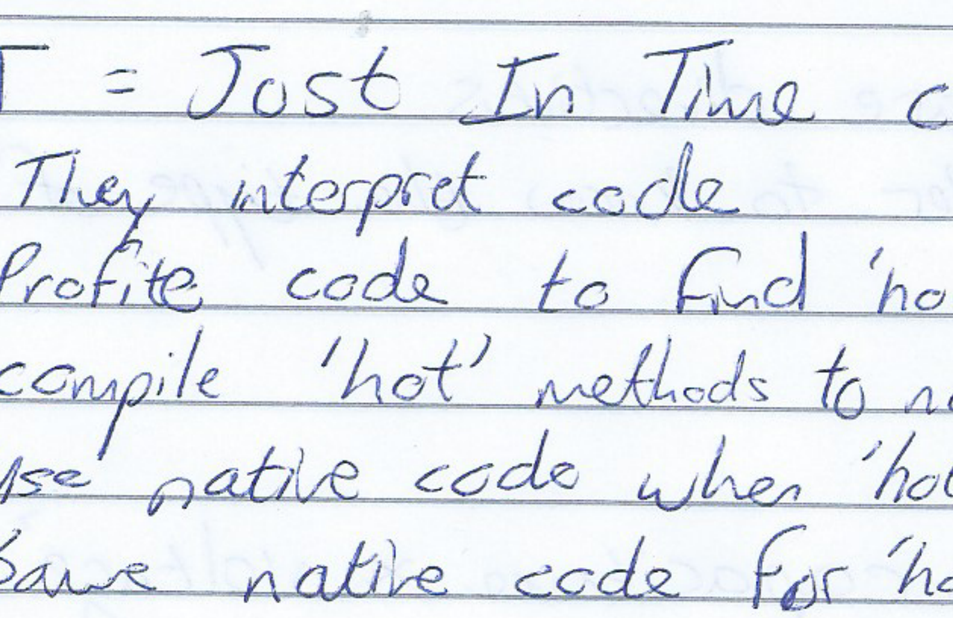
k Overflow Flag
Sign "
Zero "
Carry "

l True - add can directly access registers, immediates & then

m Bytecode is Java equivalent of a line of equivalent assembly code, holding a byte or two of opcode and a few bytes for passing parameters.
Instruction set for Java Virtual Machine

n JIT = Just In Time compiler
They interpret code
Profile code to find 'hot' (regularly used) methods
compile 'hot' methods to native machine code
Use native code when 'hot' method called
Save native code for 'hot' methods for further use.

o iadd



Adds the pops.