CO224 Lab6 Part 2

group 3

A sample programme

loadi 4 0x05

loadi 2 0x09

add 6 4 2

swd 6 4

loadi 7 0x01

lwd 5 4

loadi 1 0x01

swi 2 0x25

add 7 7 1

lwi 3 0x25

lwd 5 4

Time Taken by Memory with Cache(Part2) – 932 time units

Time Taken by Memory without Cache(Part1) – 292 time units

Obviously in this example the time with cache is significantly higher. That is because writing and reading from the memory has a miss penalty of 42 cycles as supposed to 5 cycles in part 1. But when the programme has many instructions, the likelihood of the necessary data being in the cache is high and therefore if the data is in the cache there is no miss penalty as supposed to taking 5 cycles in part 1. So for a programme with a lot of instructions having a cache will save a significant amount of time.