CS311
Assignment-05

Chidaksh Ravaru (200010046)
Pavan Kumar V Patil (200030041)

October 20, 2022

1 Abstract

An event is a tuple of the form: <event time, event type, requesting element, processing element, payload>. The event queue is a list of events ordered by time. An event is said to "fire" when the current clock cycle is equal to the event time. When this happens, the handleEvent() function of the processing element is invoked. Handling of an event may in turn lead to more events being generated, for the same clock cycle, or for some future clock cycle.

Decide which units we wish to work using events, and which directly through function calls from the main loop. For all units that we believe will recieve events, make them implement the Element interface. This will then require we to implement a handleEvent() function for that unit

2 Statistics

Program file	**Number of Cycles**	**Number of instructions**	**IPC (throughput)**
descending.asm	14960	365	0.0244
evenorodd.asm	248	6	0.0242
fibonacci.asm	3808	94	0.0247
palindrome.asm	2252	56	0.0249
prime.asm	1368	34	0.0248

Table 1: Benchmarks Statistics

3 Comments on observation

The IPC values are comaparitively less from the last time.

In the discrete event simulator model, we have taken into account the various latencies, and we are pausing our pipeline when there is access to main memory and wait for the latency number of cycles. This increases the number of cycles which leads to a decrease in IPC.

Number of Cycles in descending.asm are very high and this is due to more number of load and store instructions. Number of Cycles in evenorodd.asm are very less because number of instructions are less and the latency is also less.