Computer Architecture Assignment 5

Hrishikesh Karande & Shivesh Pandey

October 17, 2023

1 Previous Statistics Table

Following table summarizes the data for each program file with Normal Pipeline Core Model-:

File Name	Number of Cycles	No. of Instructions	CPI	No. of branch taken	No. of OF stalls
Prime.asm	79	29	2.7241	28	19
Palindrome.asm	124	49	2.5306	18	51
fibonacci.asm	157	78	2.0123	36	44
evenorodd.asm	19	6	3.1667	4	0
descending.asm	658	277	2.3754	220	126

2 Current Statistics Table

Following table summarizes the data for each program file with Latency Modelling in Pipeline Core Model-:

File Name	Number of Cycles	No. of Instructions	CPI	IPC	No. of branch taken	No. of OF stall
Prime.asm	1413	29	48.7241	0.02052	28	19
Palindrome.asm	2413	49	49.2448	0.0203	18	51
fibonacci.asm	3885	78	49.8076	0.0201	36	44
evenorodd.asm	341	6	56.8333	0.0175	4	0
descending.asm	15250	277	55.0541	0.0181	220	126

3 Observation

1. The CPI value in latency modelling is in range of 40-60 while in Normal it is 2-3.
2. The reason being using latencies during ALU Computations, Memory Accesses and write operations we are having more number of cycles for same number of intructions.