**Dennis Tjandra – 53523106 – l3u7**

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**Part I – Question 2: pipe-test.s results**

**Address: 100 - fwdOrder**

%eax – 2

%ecx – 2

%edx – 3

%ebx – 3

Result: Passed

Stalls: 0 observed

**Address: 200 - srcAHzd**

%eax – 1

%ecx – 2

%edx – 3

%ebx – 6

Result: Passed

Stalls: 0 forced stalls

3 hard coded stalls

3 total stalls observed

**Address: 300 - srcBHzd**

%eax – 17

%ecx – 18

%edx – 19

%ebx – 16

Result: Passed

Stalls: 0 forced stalls

3 hard coded stalls

3 total stalls observed

**Address: 400 - aLoadUse**

%eax – 10

%ecx – 10

%edx – 10

%ebx – 30

%edi - 4096

Result: Passed

Stalls: 3 forced stalls

3 hard coded stalls

6 total stalls observed

**Address: 500 - bLoadUse**

%eax – 26

%ecx – 26

%edx – 26

%ebx – 16

%edi - 4096

Result: Passed

Stalls: 3 forced stalls

3 hard coded stalls

6 total stalls observed

**Address: 600 - takenJmp**

%eax – 0

%ecx – 0

%edx – 0

%ebx – 1

%esp – 1

Result: Passed

Stalls: 0 observed

**Address: 700 - notTkJmp**

%eax – 0

%ecx – 1

%edx – 1

%ebx – 0

%esp – 0

Result: Passed

Stalls: 2 stalls shot down

2 total stalls observed

**Address: 800 - callRtn**

%eax – 1

%ecx – 1

%edx – 0

%ebx – 0

%esp - 61460

Result: Passed

Stalls: 3 forced stalls

3 total stalls observed

**Address: 900 - cmov**

%eax – 1

%ecx – 0

%edx – 0

%ebx – 4

Result: Passed

Stalls: 0 observed

**Part I – Question 3**

CPI for sum.s

Cycles per Instruction (CPI) = total cycles / instructionRetired Cycles

= cCnt / iCnt

= 57 / 45

= 1.2666… CPI

The CPI for sum.s is approximately 1.27 cycles per instruction. From Assignment 3, the CPI for sum.s was 2.6 cycles per instruction. Almost twice the size of CPI from this assignment.

CPI for max.s

Cycles per Instruction (CPI) = total cycles / instructionRetired Cycles

= cCnt / iCnt

= 140 / 98

= 1.4285… CPI

The CPI for max.s is approximately 1.43 cycles per instruction. From Assignment 3, the CPI for max.s was 2.41 cycles per instruction. Almost a whole cycle more for each instruction to complete comparing from this assignment.

CPI for heapsort-student.s (Assignment #1)

Cycles per Instruction (CPI) = total cycles / instructionRetired Cycles

= cCnt / iCnt

= 4046/ 3001

= 1.3482… CPI

The CPI for heapsort-student.s is approximately 1.35 cycles per instruction. From Assignment 3, the CPI for heapsort-student.s was 2.60 cycles per instruction. Almost twice the size of CPI from this assignment.

**Hours to Complete**

**Part 1:**

Dennis Tjandra: 10 hours

Matthew Park: 10 hours

Total: 20 Hours

**Part 2:**

Dennis Tjandra: 12 hours

Matthew Park: 12 hours

Total: 24 Hours