

**University of Central Florida**

**Department of Computer Science**

**CDA 5106: Fall 2020**

**Machine Problem 3: Dynamic Instruction Scheduling**

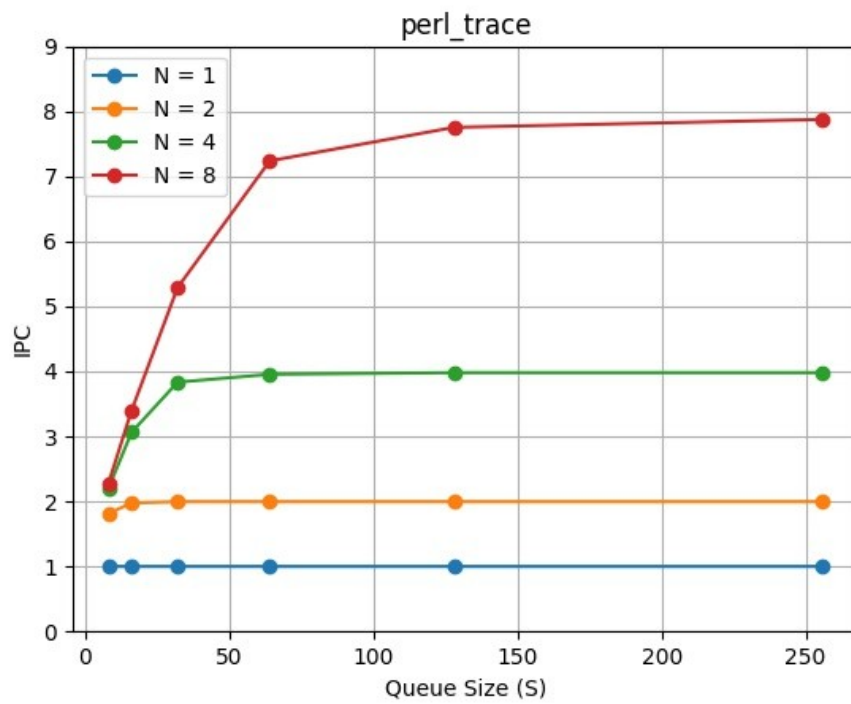
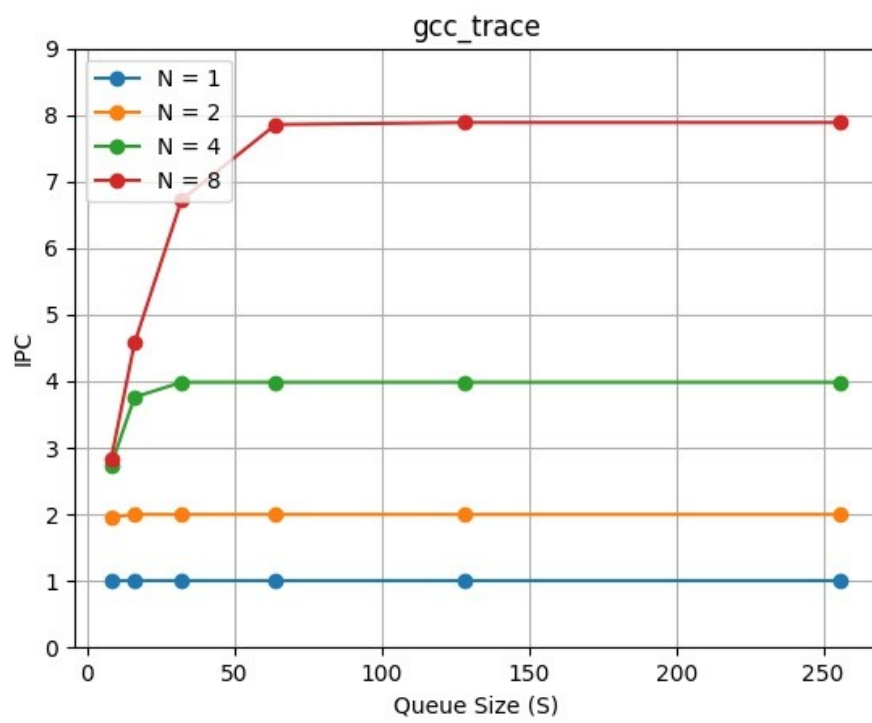
**by**

**Alexander Baekey**

Honor Pledge: "I have neither given nor received unauthorized aid on this test or assignment."

Student's electronic signature: \_\_\_\_\_  
(sign by typing your name)

#1)



#2)

Optimized Scheduling Queue size per peak Fetch Rate		
	Benchmark = gcc	Benchmark = perl
N = 1	8	8
N = 2	8	16
N = 4	32	32
N = 8	64	128

#3)

A) The results show that increased N can improve the IPC of the processor. Increased queue size (S) can increase IPC, but IPC will converge to a ceiling value. When the IPC of a given queue size is near the ceiling IPC value for that value of N, it is essentially at it's optimum for that N value, and increasing S would be practically pointless.

B) Because these architectures are setup for instructions that are reliant on each other, the resulting IPC may change based on how the instructions are interacting. There may be more complicated instruction demands within the perl trace, since the gcc trace performed better with the exact same configuration.