COMPUTER ARCHITECTURE LAB

Assignment 3

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1 Task

Develop a single cycle processor simulator for ToyRISC

2 Benchmark

Program	Static Instructions	Dynamic Instructions	Cycles	IPC
Descending	21	277	277	1.0
Even Odd	9	6	6	1.0
Fibonacci	21	78	78	1.0
Palindrome	16	49	49	1.0
Prime	16	29	29	1.0

3 Teminology

Static Instructions Number of Instructions present inside the Program

Dynamic Instructions Number of Instructions executed by the processor upon the simulation of the program.

Cycles Number of cycles required to execute the program. For our simple processor it was equal to number of dynamic instructions.

IPC Ratio of Instruction executed per cycle i.e. (Dynamic Instructions / Cycles), trivially calculated here because of simple processor design.