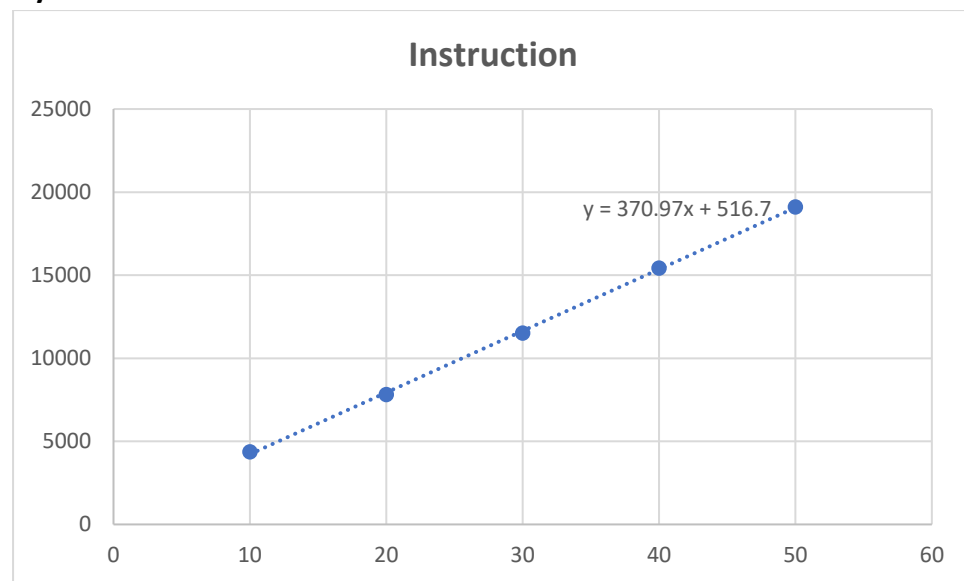


Project 3 Report

Lian Liao

CSCE212-002

Dynamic Instruction Count and CPI:



words	10	20	30	40	50
Instructions	4366	7820	11506	15425	19112

CPI:

10 words: $(1400*2+2480*3+486*4)/4366 = 2.79...$

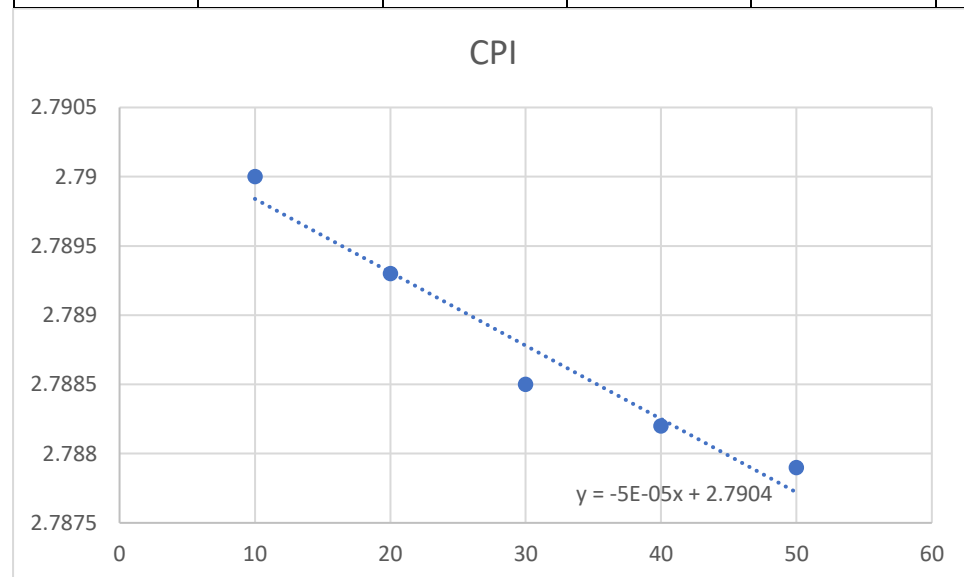
20 words: $(2520*2+4428*3+872*4)/7820 = 2.7893...$

30 words: $(3714*2+6511*3+1281*4)/11506 = 2.7885...$

40 words: $(4986*2+8720*3+1719*4)/15425 = 2.7882...$

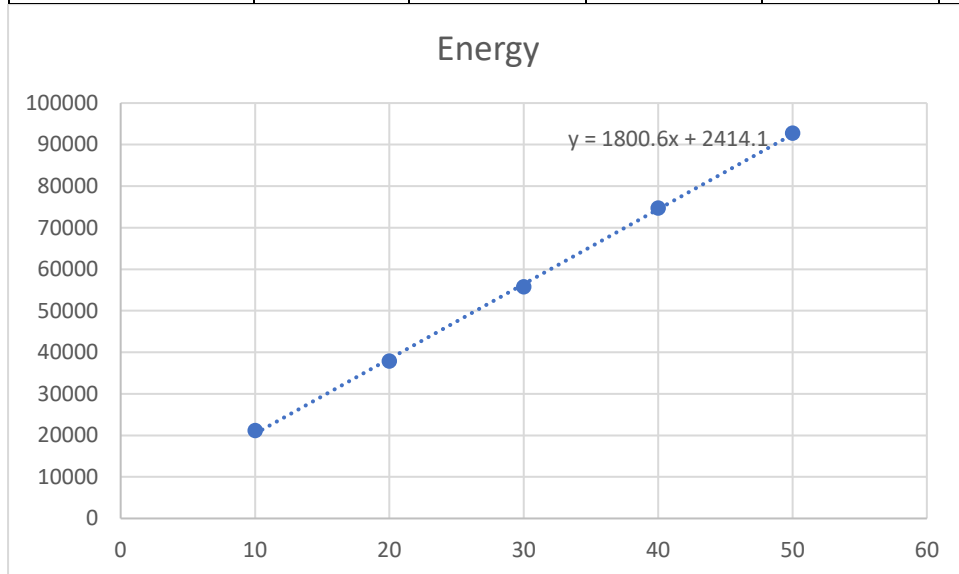
50 words: $(6180*2+10805*3+2127*4)/19112 = 2.7879...$

Words	10	20	30	40	50
CPI	2.79	2.7893	2.7885	2.7882	2.7879



Energy Consumption:

Words	10	20	30	40	50
Energy (10 ⁻¹⁵)	21113	37887	55723	74696	92737

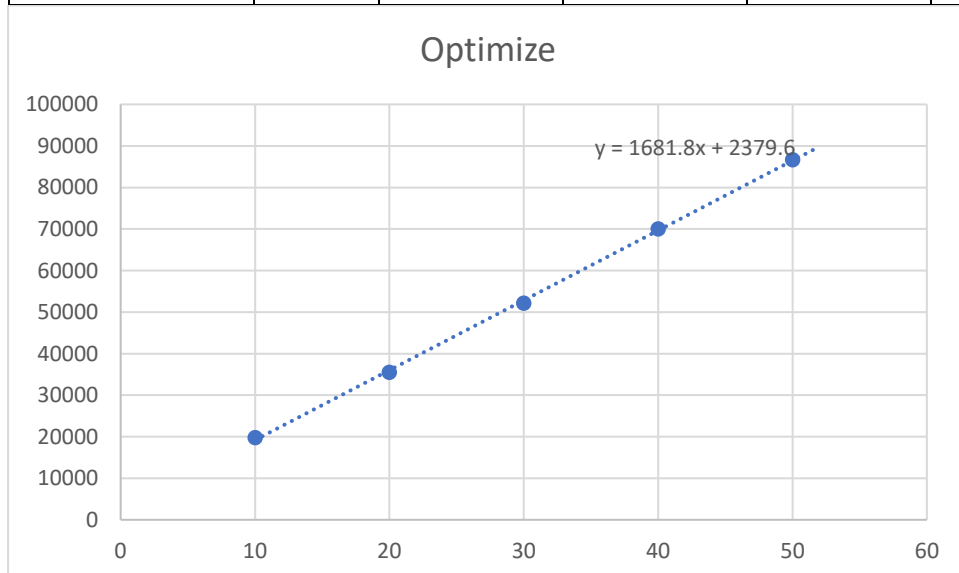


50 words: $335*3+3546*4+4067*6+1429*20+4783*2=92737$

After Optimize:

I adjust the produce which is used the most. I removed the useless code.

Words	10	20	30	40	50
Energy (10 ⁻¹⁵)	19793	35536	52181	70010	86645



50 words: $4791*3+3536*4+3525*6+1425*20+4239*2=86645$

MIPS/mW:

10 words: $4366 / (19793 * 10^{-15} * 10^9) = 220583$

20 words: $7820 / (35536 * 10^{-15} * 10^9) = 220058$

30 words: $11506 / (52181 * 10^{-15} * 10^9) = 220501$

40 words: $15425 / (70010 * 10^{-15} * 10^9) = 220325$

50 words: $19112 / (86645 * 10^{-15} * 10^9) = 220578$