

CSE331 HOMEWORK I

- Q1) The R-type program instructions takes 100 cycles.
The I-type program instructions takes 120 cycles.
The J-type program instructions takes 60 cycles.

So, improving I-type instructions with 50% is better for general improvement because majority of the cycles is caused by I-type instructions.

$$100 + 120 + 60 = 280$$

$$\frac{280 - 220}{280} \times 100 = 21.43$$

$$100 + 60 + 60 = 220$$

So, the whole program will be improved with 21.43%.