

Convex Optimization

tutorial-2

What I understand from the problem

1. The final amount in each currency should be at least c_{required}
2. We cannot trade a currency for itself
3. we cannot trade a currency for more than the amount we have to begin with
4. the final amount in each currency would be $\text{initial} + \text{what we got by trading other currencies for this currency} - \text{how much of this currency we traded}$
5. and that we must trade non-negative amount of currency

Then, I just added these constraints, the objective is to minimise the cost, which is $c_{\text{initial}} - c_{\text{final}}$ for each currency, we need to convert this to USD to standardise, as given in the problem statement, we can just multiply with $\sqrt{F_{\{j\}}/F_{\{1j\}}}$ to convert to USD