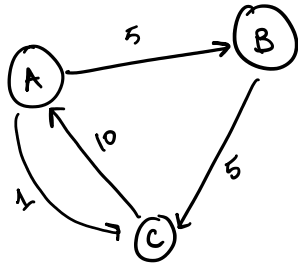


# Algorithm Intuition

Tuesday, April 23, 2024 8:12 PM

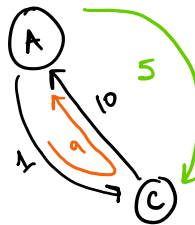
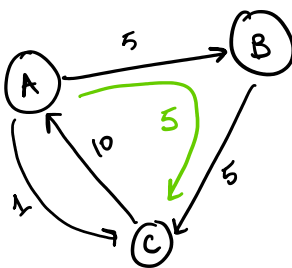
Function(A, B, n)  
From To amount



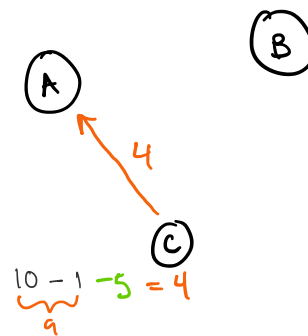
→ objective: reduce the amt of transactions!

→ Total amount of money will stay the same.

set of transactions  $\{[A, B, 5], [B, C, 5], [C, A, 10], [A, C, 1]\}$



essentially reduce transaction path from  $A \rightarrow B \rightarrow C$  to  $A \rightarrow C$ .

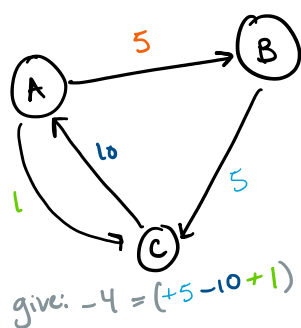


## SPLITWISE

→ for each transaction: Incoming - outgoing

\* positive = incoming  
\* negative = outgoing

For A:  
 $(+10 - 5 - 1)$   
net income: 4



① Sum of all values

$$4 + 0 - 4 = 0$$

② Members w/ 0 balance are not necessary.

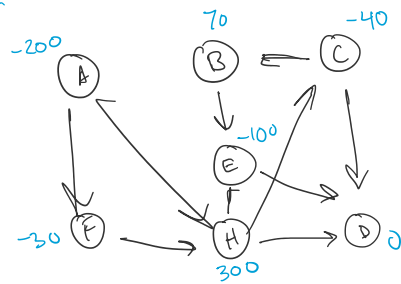
## Complex

Balances for each

$-200$   $70$   $-40$   
(R) (C)

Givers	Receives
<del>200</del>	<del>200</del>

Balances for each



Givers	Receives
<del>70</del> <sup>0</sup>	<del>-200</del> <sup>0</sup>
300	-40
	<del>-100</del> <sup>-230</sup>
	-30

Sum of total should be 0

balance list

[70, -200, 300, -40, -100, -30] Depth First Search

★ Any time a transaction happens one will become zero

