

Problem 5: Blockchain

For this problem I decided to implement a linked list because we needed to have a reference to the next block in the chain.

Time and Space Complexity

add

Time $\rightarrow O(1)$, because if we want to add a new node we have the reference to the tail of the LinkedList

Space $\rightarrow O(n)$, our space complexity takes a $O(n)$ because it depends on the amount of blocks that are added to the LinkedList

Search

Time $\rightarrow O(n)$, because if we want to look for a node we have to traverse the entire LinkedList

Space $\rightarrow O(1)$, because we return a single node or None.