





A simple example
stack operations
Push(S,x)
Pop(S)
MultiPop(S,k):
pop k top objects of S.
If S has less than k objects,
then pop all in S.
a sequence of n Push, Pop and MultiPop operations on initially empty stack.
Worst-case cost:
For each operation:
Push: O(1)
Pop: O(1)
MultiPop: O(n) since the stack size is at most n
There are n operations (possibly $O(n)$ MultiPop operations), the upper bound is $O(n^2)$ .
Problem: O(n <sup>2</sup> ) upper bound is not tight.





Actual cost:	
Push	1
Рор	1
MultiPop	min(k,s)
Amortized cost:	
Push	2
Рор	0
MultiPop	0
Will the bank accoun Yes. A stack of pla on the stack and pay \$2. One dolla plate on the stack	t be balanced? Ites in a cafeteria. We start with an empty stack. Push a plate pop a plate off the stack cost \$1 each. Now, when push, we ir for the actual cost, and one dollar as a credit. Since every c has a dollar of credit on it, pop is free.





