Amortized Complexity

- ✓ Aggregate method.
- Accounting method.
- Potential function method.

Potential Function

- $P(i) = amortizedCost(i) - actualCost(i) + P(i - 1)$
- $\Sigma(P(i) - P(i - 1)) =$

  $\Sigma(amortizedCost(i) - actualCost(i))$
- $P(n) - P(0) = \Sigma(amortizedCost(i) - actualCost(i))$
- $P(n) - P(0) >= 0$
- When $P(0) = 0$, $P(i)$ is the amount by which the first i operations have been over charged.

Potential Function Example

	a = x + ((a + b) * c + d) + y ;																			
actual cost	1	1	1	1	1	1	1	1	1	5	1	1	1	1	7	1	1	7		
amortized cost	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2		
potential	1	2	3	4	5	6	7	8	9	6	7	8	9	10	5	6	7	2		

Potential = stack size except at end.