EE360C: Algorithms
The University of Texas at Austin — Quiz #9
Dr. Christine Julien, Dr. Vallath Nandakumar — April 12, 2018 (*in class*)

Name: **EID:**

Quiz #9

Problem 1: Dynamic Programming

You are standing at the bottom of a staircase of n steps. The i-th step has some non-negative cost cost[i] assigned (0 indexed, i goes from 0 to n-1). Once you pay the cost, you can climb up either one step or two steps. A function C(i) is defined to denote the minimum cost from the first step to the ith step. Provide C(0) (i.e., no steps are considered) and C(1) (i.e., only the first step is considered). Then provide C(i) in terms of previously computed values of C.

- C(0) =
- C(1) =
- C(i) =

Solution

$$C(0) = 0$$
$$C(1) = cost[0]$$
$$C(i) = min \begin{cases} cost[i-1] + C[i-1] \\ cost[i-2] + C[i-2] \end{cases}$$