class Solution {

private:

int n;

vector<int> cache;

const int INF = 987654321;

int rob(vector<int>& nums, int index) {

if (index == n) return 0;

if (index > n) return -INF;

int &ret = cache[index];

if (ret != -1) return ret;

int result = nums[index];

result = max(result, nums[index] + rob(nums, index + 2));

result = max(result, nums[index] + rob(nums, index + 3));

return ret = result;

}

public:

int rob(vector<int>& nums) {

n = nums.size();

cache = vector<int>(n, -1);

return max(rob(nums, 0), rob(nums, 1));

}

};