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class Solution {
public:
    long long f(int i, string& s, vector<long long>& dp){
        if(i<0) return 1;
        if(dp[i] != -1) return dp[i];
        long long pick = 0;
        if(s[i] != '0'){
            pick = f(i-1, s, dp);
        }
        long long not_pick = 0;
        string test = "";
        test += s[i];
        if((i-1) >= 0){
            test = s[i-1]+test;
            if(stoll(test) <= 26 && stoll(test) >= 10) not_pick = f(i-2, s, dp);
        }
        return dp[i] = pick + not_pick;
    }

    int numDecodings(string s) {
        int n = s.size();
        vector<long long> dp(n, -1);
        long long count = f(n-1, s, dp);
        return count;
    }
};

```