

# Assignment 2 - FIT2014

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## 1 Problem 0 - A

Base Case: The problem works when  $N = 2$ , as  $P_2 = 2$ , as given in the problem description

$$P_2 = Q_1 * P_{2-1} + Q_2 * P_{2-2}$$

$$P_2 = 1 * 1 + 1 * 1$$

$$P_2 = 1 + 1$$

$$P_2 = 2$$

Now we solve for  $P_{n+1}$

$$P_{n+1} = \sum_{i=1}^n Q_i P_{n-1} + Q_{n+1} P_{(n+1)-(n+1)}$$

$$P_{n+1} = \sum_{i=1}^n Q_i P_{n-1} + Q_{n+1} P_0$$

$$P_{n+1} = \sum_{i=1}^n Q_i P_{n-1} + P_n$$

$$P_{n+1} = 2 \sum_{i=1}^n Q_i P_{n-1}$$

No idea what to do now.<sup>1</sup>

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<sup>1</sup>Morituri te salutant.