CS 3305 HW5 4/20

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Song List: min

Faerie's Aire = 4

Duetto Botto = 4

Three Min = 3

Hot Patootie = 3

I cannot be played = 2

number of concerts which last n minutes a_n

a_n = # concerts start 4 min song = 2 (Faerie/Duetto) · a_{n-4} (concerts w/ length $n-4$)

+ " " 3 " = 2 (Three/Hot) · a_{n-3} (" " " $n-3$)

+ " " 2 " = 1 (I cannot be,..) · a_{n-2} (" " " $n-2$)

+ concert with only reflection = 1

$a_n = 2a_{n-4} + 3a_{n-3} + a_{n-2} + 1 \quad n \geq 4$

initial conditions a_0, a_1, a_2, a_3 needed

$a_0 = 1$ (0 min reflection)

$a_1 = 1$ (1 min reflection)

$a_2 = 2$ (2 min reflection OR "I cannot be played")

$a_3 = 3a_{n-3} + a_{n-2} + 1 = 3(1) + 1 + 1 = 5$ ← same equation but omitting 4min songs

$a_n = 2a_{n-4} + 3a_{n-3} + a_{n-2} + 1, \quad n \geq 4$

$a_0 = 1$

$a_1 = 1$

$a_2 = 2$

$a_3 = 5$