

Max Profit Problem

Mr. X owns a large strip of land in Mars Land. For the purposes of this problem assume that he has infinite land capacity. On each parcel of he can choose to develop it as per his wishes. He can build either Theatres, Pubs or Commercial Park. Commercial Park can house 6 Commercial Spaces; Theatre has 8 Auditoriums and Pub house only one dance floor.

- A Theatre takes 5 units of time to build and covers 2x1 parcel of land.
- A Pub takes 4 units of time to develop and covers 1x1 parcel of land.
- A Commercial Park takes 10 units of time to build and covers 3x1 parcel of land.

Each unit of time that a building is operational, it earns him money.

Establishment	Earnings
Theatre	\$1500
Pub	\$1000
Commercial Park	\$2000

He cannot have two properties being developed in parallel in one unit of time.

- After n units of time where n is the input, he earns money based on which properties have been developed.
- The output should be T for Theatre followed by number developed, P for Pub followed by number developed and C for Commercial Park followed by number developed.

Challenge

- Come up with the right mix of properties based on the given input unit of time (n).

	Test Case 1	Test Case 2	Test Case 3
Input	Time Unit: 7	Time Unit: 8	Time Unit: 13
Output	Earnings: \$3000 Solutions 1. T: 1 P: 0 C: 0 2. T: 0 P: 1 C: 0	Earnings: \$4500 Solutions 1. T: 1 P: 0 C: 0	Earnings: \$16500 Solutions 1. T: 2 P: 0 C: 0