6.034: Food Truck Games!

Dr. Kimberle Koile

We've discussed game theory in the context of playing games, but game theory also plays an important role in other domains as well, particularly in economics. (The Nobel Prize in economics has gone more than a few times to academics working on game theory!)

The idea is still one of adversarial search, but the nodes in the game tree represent decision points rather than board configurations, and the links represent decision choices.

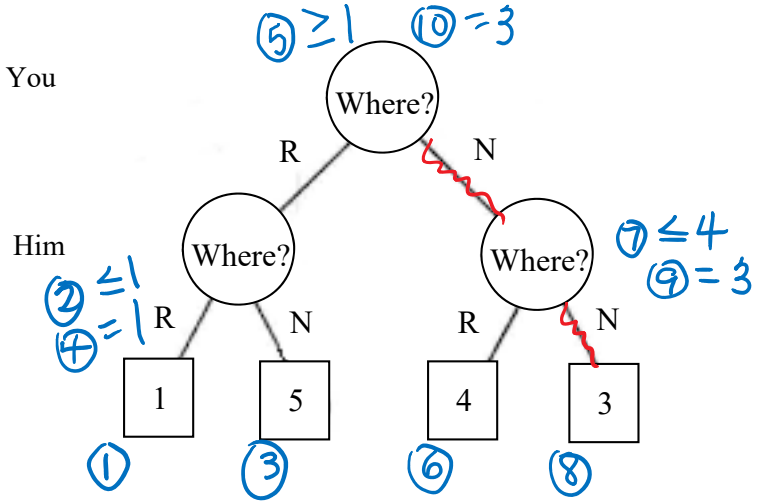
Consider the following example.

You want to park your food truck in downtown Boston where you'll get lots of business during the morning and evening rush hours. Your competitor wants to do the same thing and is determined to take as much business away from you as possible. There's another location that you're considering that doesn't really have rush hours, but instead has a steady stream of customers throughout the day. If your competitor puts his truck in that location too, you think you wouldn't lose as much business. Where should you park your truck?

Here's your assessment of the situation. The numbers below represent an estimate of your total sales in hundreds of dollars at the rush hour (R) location and the non-rush-hour (N) location.

	Him at R	Him at N
You at R	1	5
You at N	4	3

1. Draw the game tree, assuming that you choose your location first.



2. Where do you park your truck? Where does your competitor park his truck?

   You and your competitor both park your trucks at the non-rush-hour location (N).