

Project proposition

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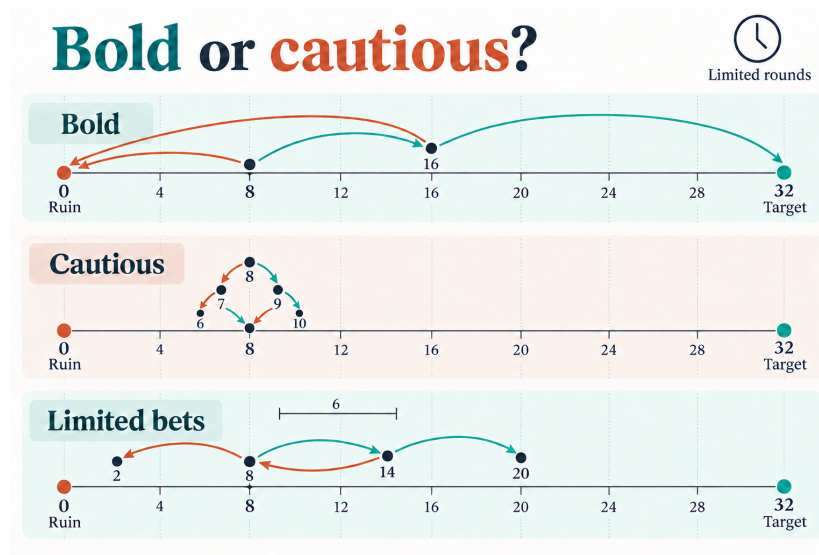


Figure 1: Which one will you be ?

Description:

Should you make a few large bets or many small ones to reach a target fortune before losing everything?

In this project, we will study this question through Dubins and Savage's red-and-black game, in which each bet either increases or decreases the player's fortune by the amount staked.

We will first explore the model and compare bold and cautious betting strategies. We will then investigate how optimal decisions change when the number of rounds and the size of each bet are limited.

Using Python, we will compute and visualize success probabilities, compare strategies, and explain selected observations using probability.

Prerequisites: Probability course; Python (Jupyter, NumPy and Matplotlib).

Material: Dubins and Savage, *How to Gamble If You Must*, Chapter 5.