navigating

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CHAPTER 1

the naive model

A vertex-weighted digraph G, with weighting π. Imagine that for each $v \in V(G)$, there are $\pi(v)$ coins stacked at v. Given a starting location $w \in V(G)$, what is the most efficient way to amass coins? The *score* of a directed path $P := wz_1 \cdots z_r$ is

$$s(P) := \frac{1}{r} \sum_{i \in [r]} \pi(z_i).$$

For a sequence $P_1, P_2, \ldots$ of directed paths in G starting at w, we are interested in the sequence $s(P_1), s(P_2), \ldots$. Does it diverge to positive infinity, bounce around, or converge to a finite value?