Sample Report

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1 Problem 1

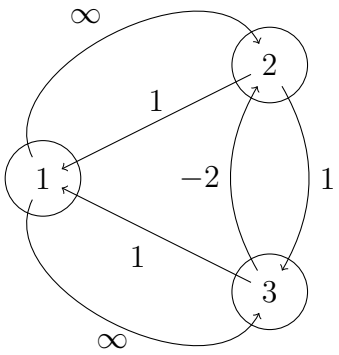
Suppose we start with a currency i_1 and and trade our way through $i_2, i_3 \ldots$ to end up with a currency i_k. Its easy to see that if we start with one unit of i_1 currency then we will end up with $R[i_1, i_2].R[i_2, i_3] \ldots R[i_{k-1}, i_k]$ amount of currency i_k. We are more comfortable with addition than multiplication [Tawarmalani et al., 2009]. Hence, we can model the above conversion by taking log (base e) of $R[i, j]$ i.e. we start with $\log 1 = 0$ unit of currecy i_1 and end up getting $\log(R[i_1, i_2].R[i_2, i_3] \ldots R[i_{k-1}, i_k]) = \log R[i_1, i_2] + \log R[i_2, i_3] + \cdots + \log R[i_{k-1}, i_k]$ amount of currency i_k. Now further more, we want to choose set of currencies in our trade path such that we end up with largest units of i_k. Mathematically, we want to choose a set of currencies in our trading path such that $\log R[i_1, i_2] + \log R[i_2, i_3] + \cdots + \log R[i_{k-1}, i_k]$ is maximized or $-\log R[i_1, i_2] - \log R[i_2, i_3] - \cdots - \log R[i_{k-1}, i_k]$ is minimized.

2 Algorithm

Algorithm 1: INITIALIZE(G, s)

Input: G, s
Result: initialization
for *each vertex* v *in* G **do**
    $d(v) = \infty$
    $\pi(v) = null$
end
$d(s) = 0$

3 Tikzpicture



4 Subfigures

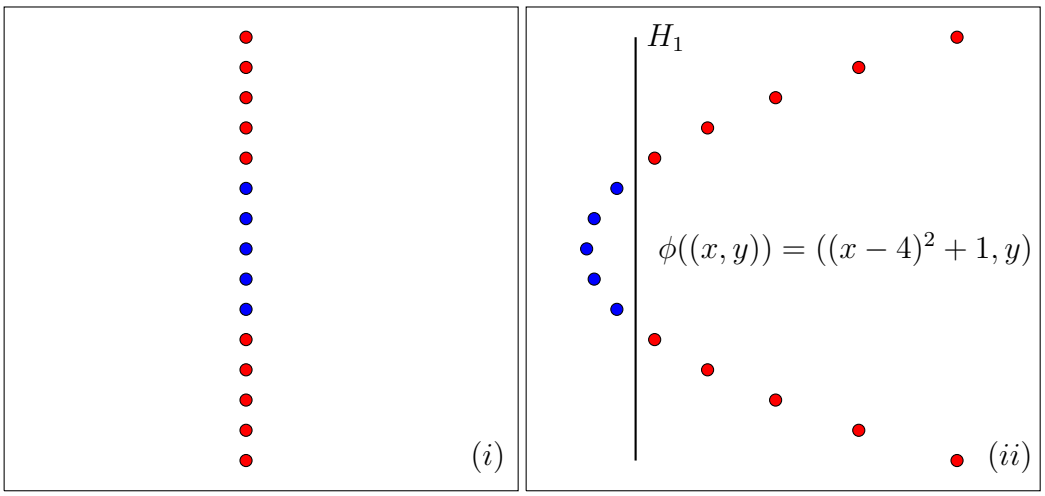


Figure 1: Training Examples are not linearly separable

5 External image

Figure 2: A bird

References

[Tawarmalani et al., 2009] Tawarmalani, M., Kannan, K., and De, P. (2009). Allocating objects in a network of caches: Centralized and decentralized analyses. *Management Science*, 55(1):132–147.