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Assignment 2

3.(a)Answer

1) The HITS algorithm gives two scores to every node:

- Hub Score: Measures score by nodes linking to authoritative nodes
- Authority Score: Measures score by important hubs link to the node.

2)Effect of Adding or Removing Links

- **Adding Links to an Authority Node**- increases the authority score. Hubs linked to this node also see a small increase in hub scores.
- **Removing Links from an Authority Node**- decreases the authority score. Hubs previously linked to this node also see a decrease in hub scores.
- **Adding Links to a Hub Node**- increases the Hub score as well as the authority score of authorities receiving these links.
- **Removing Links from a Hub Node**- decreases the Hub score as well as the authority score of authorities previously pointing to these links.
- **Adding a Strong Bidirectional Link**- increase in Authoritative and hub scores where two authoritative blogs are linked to each other and two hubs are linked to each other
- **Introducing a New Blog with Many Links**- The hub score increases if a new node links to an existing authoritative node but the authority nodes only gain a small increase

3.(b)Answer

1)Yes, a blog can be both a strong hub and a strong authority.

- Hub Score: Measures score by nodes linking to authoritative nodes
- Authority Score: Measures score by important hubs link to the node.

A blog can have both a high authority scores and a high hub score if it is frequently linked by many other authoritative blogs

2)Example- Wikipedia, RealClearPolitics.com

3) The HITS algorithm can handle nodes that have both high authority and hub scores but when many blogs are closely connected, it creates a dense subgraph making it harder to differentiate which nodes are most important.

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