Project Algorithms & Datastructures

Group 35

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**Collaborative Filtering**

**Scenario 0:** A HashMap is useful because it provides key-value access to data.

Other options are stacks, queues and dictionaries.

Advantages of using HashMaps are:

Disadvantages of using HashMaps are:

Advantages of using stacks are: easy to store.

Disadvantages of using stacks are: you are restricted to the last added value, which should be removed before you can access the second last value.

Advantages of using queues are: easy to store.

Disadvantages of using queues are: you are restricted to the first added value, which should be removed before you can access the second value.

**Scenario 2:** The cosine distance is totally wrong when, as an example, 4 people give 2 movies a different rating, but the rating they all give to one movie is the same for every person.

Example:

|  |  |  |
| --- | --- | --- |
|  | Movie A | Movie B |
| User A | 5 | 1 |
| User B | 5 | 1 |
| User C | 5 | 1 |
| User D | 5 | 1 |
| d(A,B) = 1 - = 1 - = 0 | | |

**Scenario 3:** When a movie is not rated, there is a problem. We can solve it by giving that movie a rating of 2.5. If a user hast just watched one of the greatest movies he’s ever seen or one of a kind he never wants to witness again, he’s much more likely to give this movie a rating. Whereas if the user thinks the movie is rather mediocre, he might not have the needs to express his/her feelings about the movie. Giving this movie an average rating of 2.5 might be a good solution to get rid of movies which don’t have a rating.

**Scenario 4:** Median? Sorteren en daaruit de hoogste nemen?

**Content Based Filtering**

**Scenario 0:** Idem as scenario 0 in CollaborativeFiltering.

**Scenario 1:** - The complexity of Dynamic1 is O(n5) in worst case.

- A worst case scenario is that all the letters in String s are the same. There will be may (equal) SquareSubsequences. The longest SquareSubsequence will have a length of n when n is even or n-1 if n is uneven, with n = s.lenght();

- The complexity of Dynamic2: not implemented