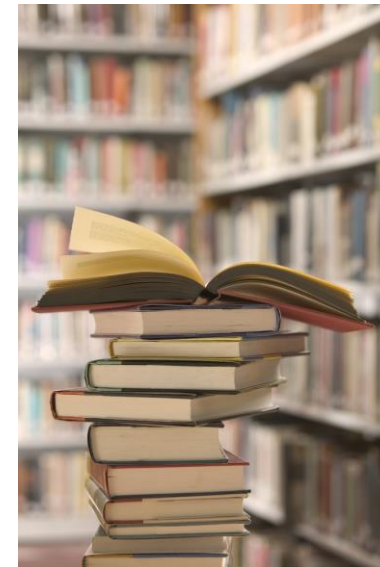# SNOTRA

Scalable Neighbor-based Online Textbook Recommendation Application

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CREATING THE NEXT

Book Recommendation System

A book recommendation system is a subclass of information filtering system that seeks to predict the "rating" or "preference" a user would give to a book

The Heilmeier Catechism

1) What are we trying to do?

Building a book recommendation system (SNOTRA) using publicly accessible data (Goodreads API, Amazon Reviews) from a user centric perspective

2) How is it done today; what are the limits of current practice?

- Content based Filtering – Based on the user's previous choices
- Collaborative Filtering – Based on choices of similar users
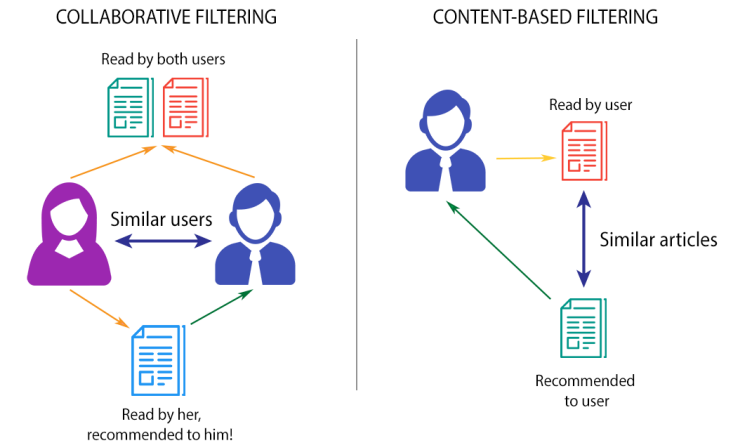
3) What's new in our approach? Why will it be successful?

Build a hybrid approach exploring the relative strengths of both content-based and collaborative filtering approaches

Combination of both the approaches would give a better and personalized recommendation to the user

4) Who cares?

- Avid readers looking for new books
- New readers looking for books to start off with

5) If you're successful, what difference and impact will it make, and how do you measure them?

Enhance the experience of readers and introduce them to new books with a focus on intra-list similarity metric

Impact measured through customer feedback and user studies

6) What are the risks and payoffs?

Risks
- Losing customers, if recommended books not liked by them
- Fudging of characterising details of the book by publisher

Payoffs
- Acquisition of new customers
- Retention of existing customers

7) How Long will it take?

Data collection and cleaning: 100 hours

Building Initial Version (Collaborative Filtering) + Feedback: 100 hours

Final Version (Hybrid) + Feedback: 200 hours

8) How much will it cost?

No cost for data gathering due to the use of public API

Only cost will be the man-hours employed

9) What are the midterm and final "exams" to check for success? How will progress be measured?

Midterm

- Build an initial version of the model (Collaborative Filtering) and use RMSE to evaluate the recommendation system
- Conduct feedback surveys regarding the recommendation system

Final

- Build the final version of the model (Collaborative Filtering) and use RMSE to evaluate the recommendation system
- Conduct feedback surveys regarding the recommendation system

Plan of activities
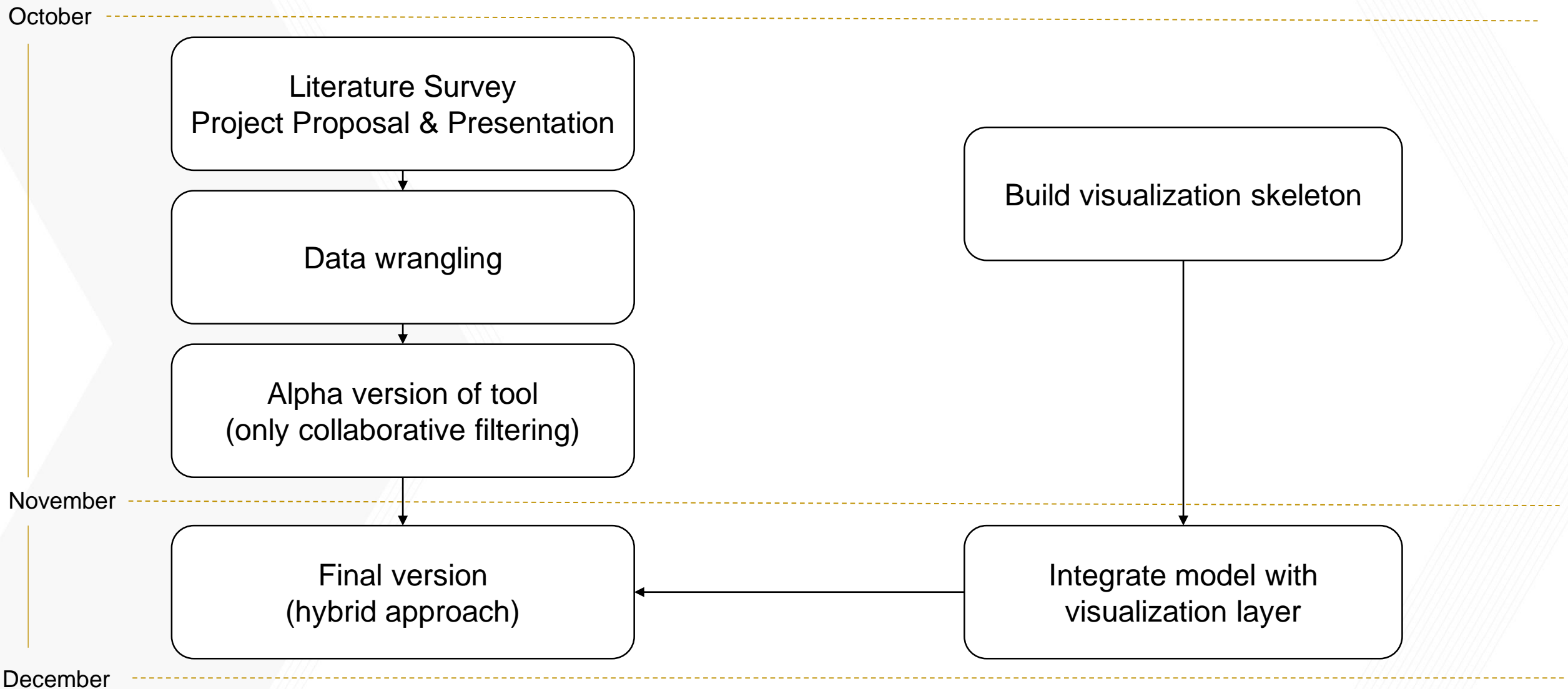
Literature Survey

1) Content Based Filtering

Mooney, Raymond J., and Loriene Roy. "Content-based book recommending using learning for text categorization." Proceedings of the fifth ACM conference on Digital libraries. ACM, 2000.

Rana, Chhavi, and Sanjay Kumar Jain. "Building a Book Recommender system using time based content filtering." WSEAS Transactions on Computers 11.2 (2012): 2224-2872.

2) Collaborative Filtering

Wang, Zan, et al. "An improved collaborative movie recommendation system using computational intelligence." Journal of Visual Languages & Computing 25.6 (2014): 667-675.

Okon, E. Uko, B. O. Eke, and P. O. Asagba. "An Improved Online Book Recommender System using Collaborative Filtering Algorithm." International Journal of Computer Applications 975: 8887.