Team: NA coders
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Project Proposal

The NA Coders will be competing in the IR (Information Retrieval) competition.

Our team is prepared to research, test, and implement state of the art search methods and techniques. For this project, we'll be using python, and focusing on implementing and tuning the methods mentioned in the proposal(query expansion, feedback, rank fusion, etc).
We will dig deeper into more advanced ranking techniques such as learning to rank, and Okapi BM25. We have experienced Okapi BM25 in the previous assignments and it's truly a state-of-the-art technique. I think it'll help with the project using different parameters. Learning to rank is a ranking technique where it learns to directly rank items by training a model to predict the probability of one item over another. We will be testing 3 different learning to rank algorithms: RankNet, LambdaRank and LambdaMART. We are prepared to learn more about these techniques to help us reach the baseline and achieve high standing position in the leaderboard.

For query expansion, we'll be looking into utilizing WordNet with the Natural Language Toolkit to help test variations of query expansion to aid in the text retrieval model.

For ranking fusion, since we are trying different IR models, it's best to have a method that can combine these models together so the overall probability that the document is relevant can be higher.

Finally, time permitting, we'll test out and incorporate additional retrieval methods listed here, such as Compound term processing and Contextual Searching.