

Drug Reviews: What do they mean?

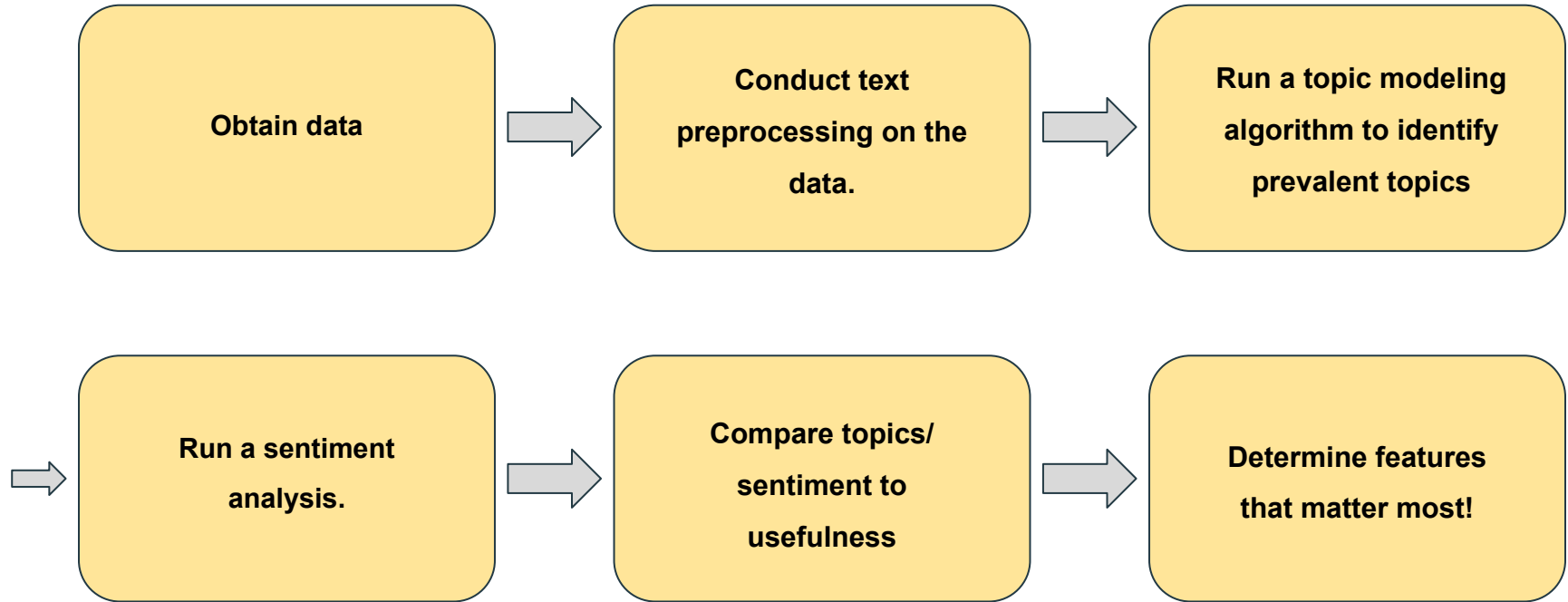
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Introduction

- In a Harvard News Article from 2019, one of the largest concerns from new medicines were:
 - Unknown side effects
- Problem:
 - Not everyone reports when they do have a side effect.
- Goal:
 - Create a system in which people can easily see what side effects may be present.



Methodology



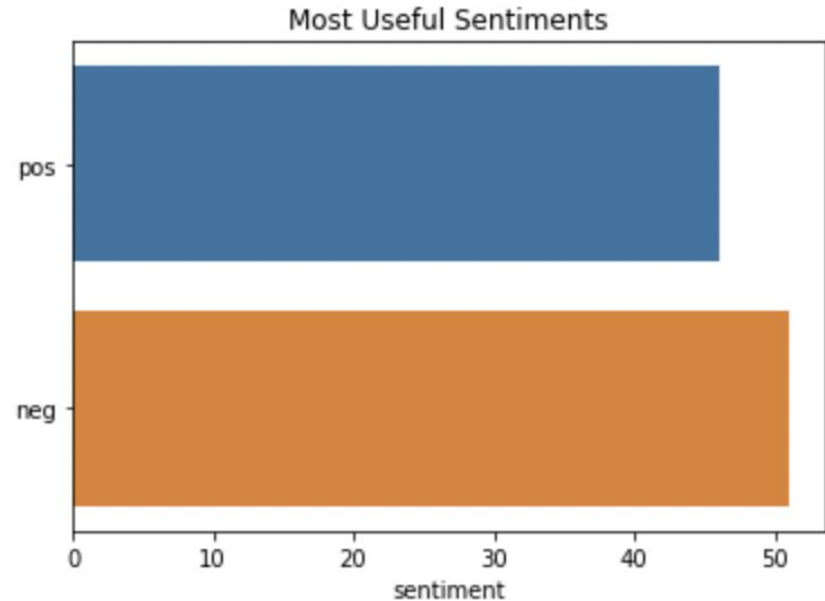
Data

- Data was obtained from Kaggle dataset that uses drug reviews obtained from UC Irvine researchers.
 - Review
 - Usefulness
 - 10 star rating system
 - Drug name
 - Condition
- ~ 160000 responses
- Potential lack of users marking reviews as useful in 2017



Sentiment Analysis

- Sentiment analysis was conducted using VADER
- Top 100 useful reviews:
 - Majority of extremely negative reviews



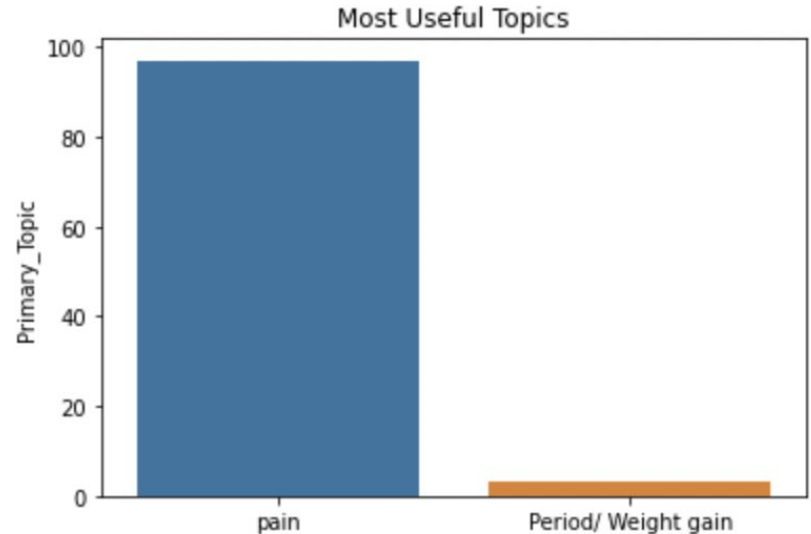
Topic Modeling

- Topics were obtained using a topic modeling algorithm:
 - LSA
 - Interested in seeing what topics were found to be most useful
 - 3 topics were chosen



Most popular topics

- The topics that arose from the LSA were:
 - Pain (0)
 - Period/ Weight gain (1)
 - Length of side effects (2)
- Looking at the top 100 useful reviews:
 - Pain was talked about most



Conclusion

- The useful sentiment/ topic combination:
 - Were positive sentiments about lack of pain
- Future Direction
 - Try having more topics be created
 - Try out other topic modeling/ clustering methods
 - Incorporate type of drug/ condition to see how those affect usefulness of a review

