

# Game Recommender System Based on Sentiment Analysis of User Comments

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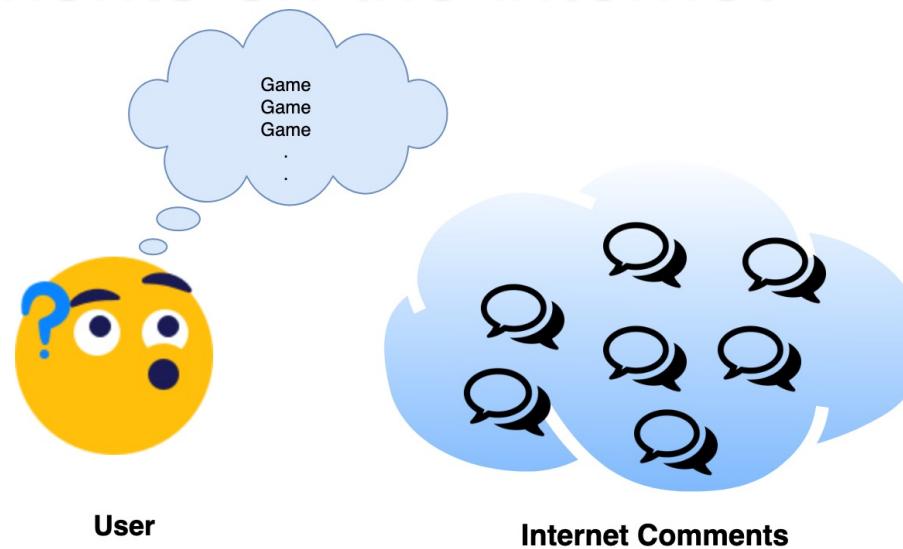
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# Agenda

- Problem
- Suggested Solution
- Implemented System
- Experimental Procedure
- Data and Tools
- Result
- Limitations
- Conclusions and Future works

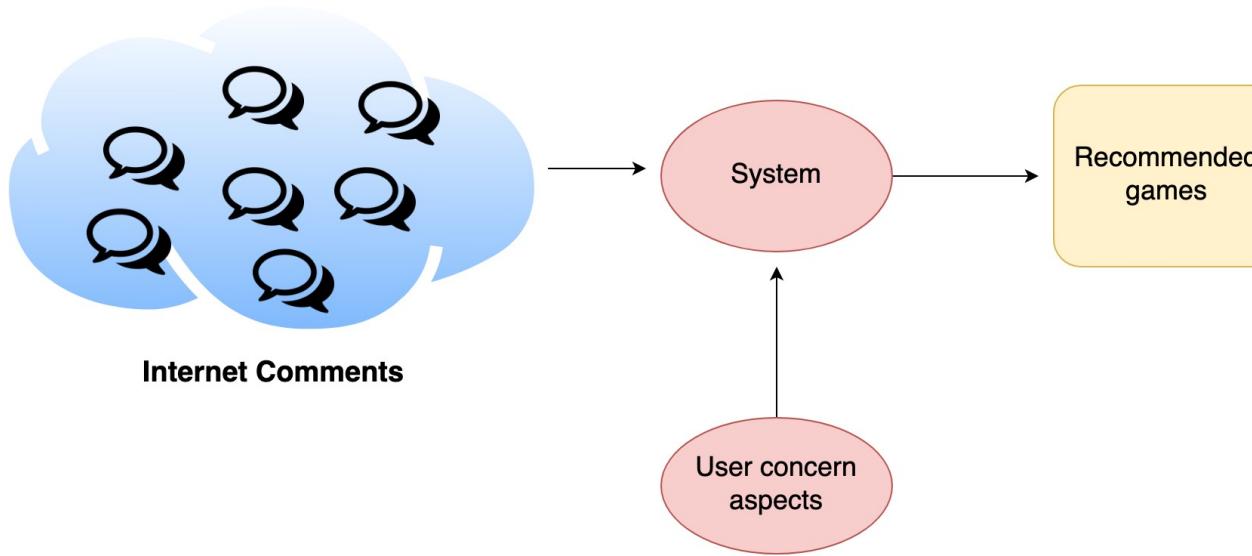
# Problem

- A lot of PC games
- They are not cheap
- To make decisions of which game should buy are sometimes difficult
- Impossible to read all reviews and comments on the internet

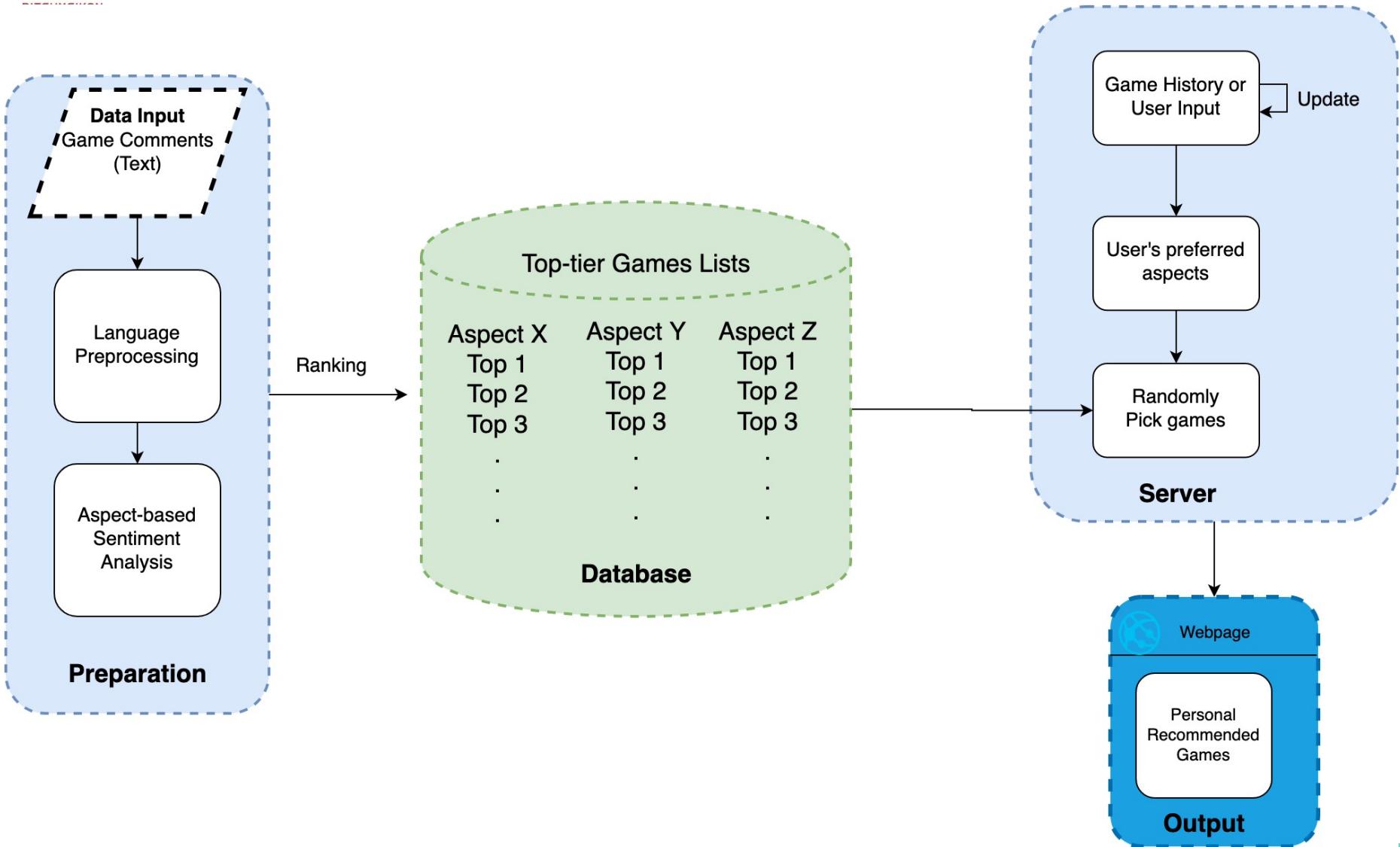


# Suggested Solution

- Sentimental game recommender system
- Based on aspect-based sentiment analysis of comments for the games
- Aspect-based Sentiment Analysis: identifying and deterring the commenter's attitude towards a topic

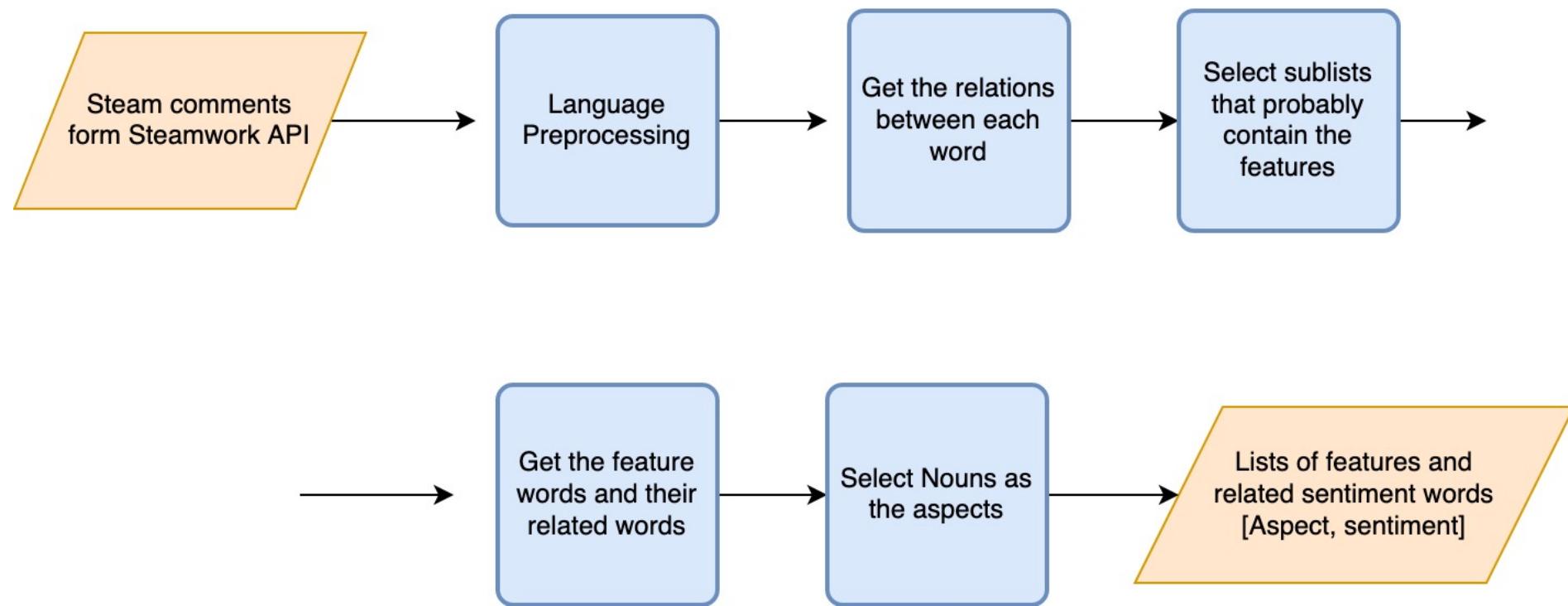


# Implemented System



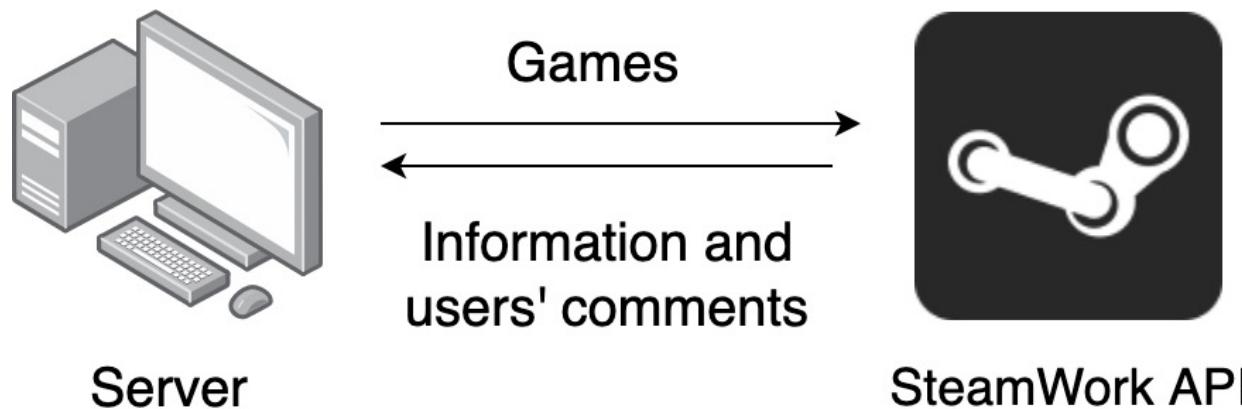
# Experimental Procedure

- Aspect-based Sentiment Analysis of 10 comments for the game “Grand Theft Auto V” on Steam



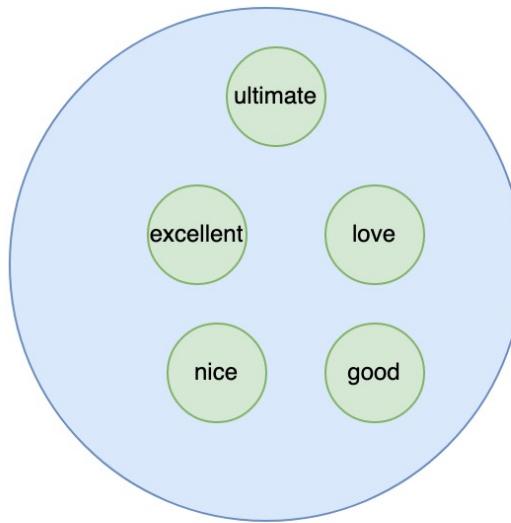
# Data and Tools

- Data Input: Game Comment on Steam (game digital distribution service)
- Using official API “Steamwork” to get data (Json form)
- Software Tools: Natural Language Toolkit (NLTK), StanfordNLP
- Programming Language: Python

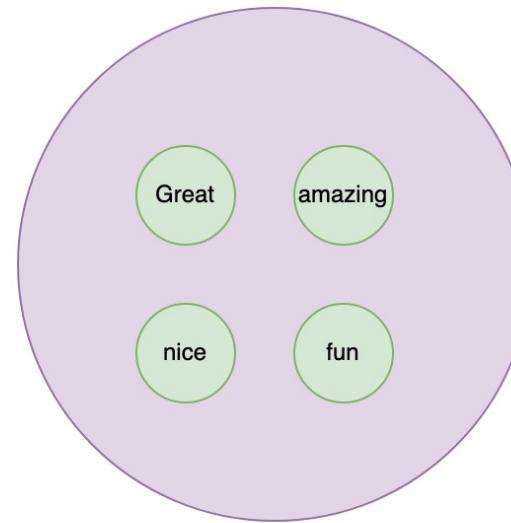


# Result

Game

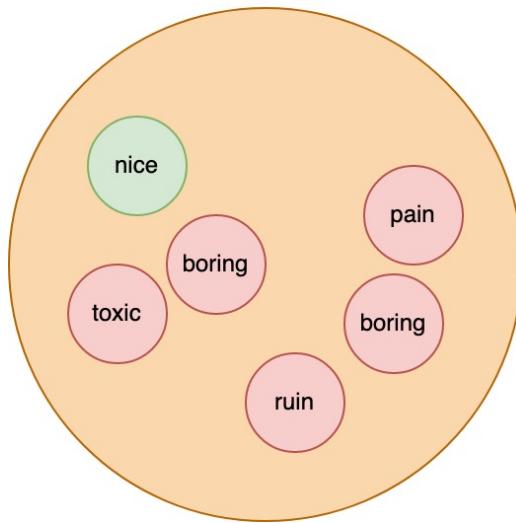


Story mode

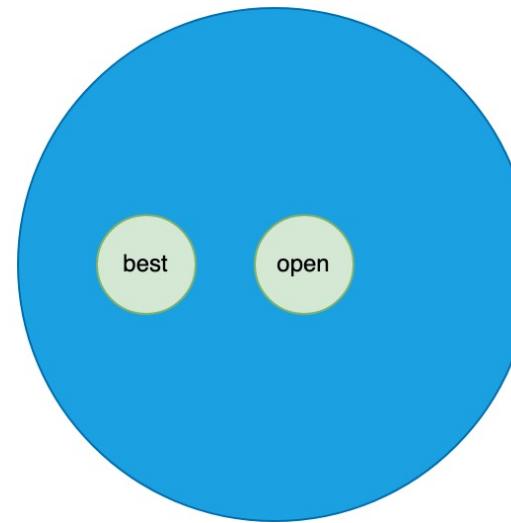


 Positive sentiment

Online



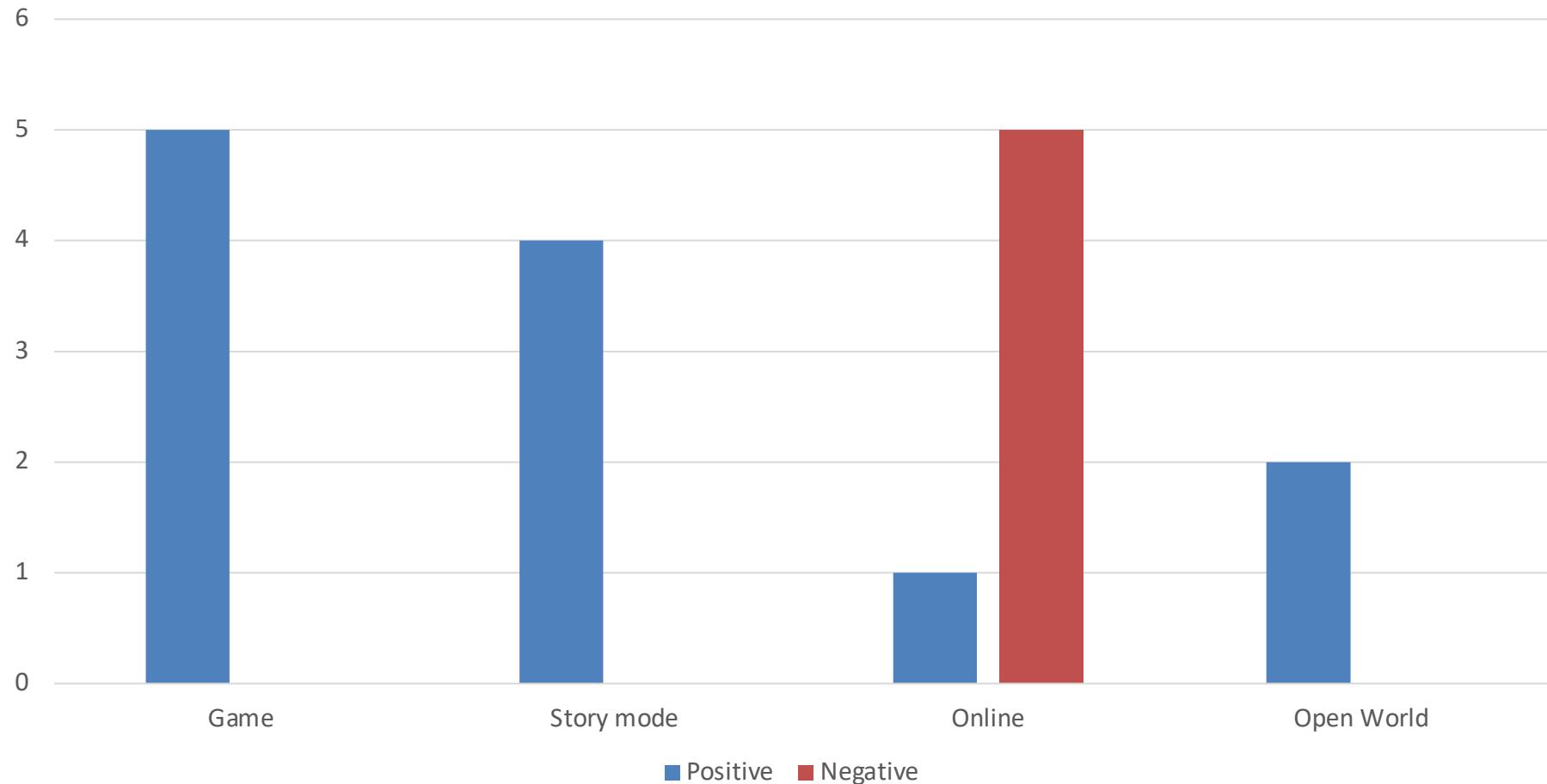
Open World



 Negative sentiment

# Result (2)

GTA V Aspect-based Sentiment Analysis  
Number of Comments: 10



# Limitations

- Deep Learning is required if we want pre-defined list of aspects-categories
- It would be difficult if the sentences are too “strange” for data cleaning
- Challenges in using NLP (Natural Language Processing) preprocessing techniques for unofficial writing
- Time consuming and may have problems for language processing if we input large data sets

# Conclusions and Future Works

- Goal: Game Recommender System by Aspect-based Sentiment Analysis
- Complete the system design
- Experimented with aspect-based sentiment analysis
- Future works: Add more NLP (Natural Language Processing) preprocessing techniques, prototype the recommender system