

# Game Review Analysis for Steam



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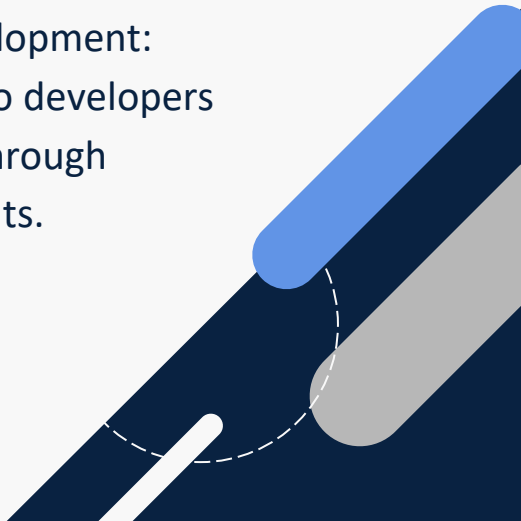
## Business Proposal

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# Business Problem-Summary

**Steam Reviews** play a crucial role in impacting the gaming experience for both developers and consumers.

- Aiding Purchase Decisions: Provide user experiences, helping potential buyers make informed decisions.
- Facilitating Iterative Development: Offer valuable feedback to developers to improve their games through updates and enhancements.





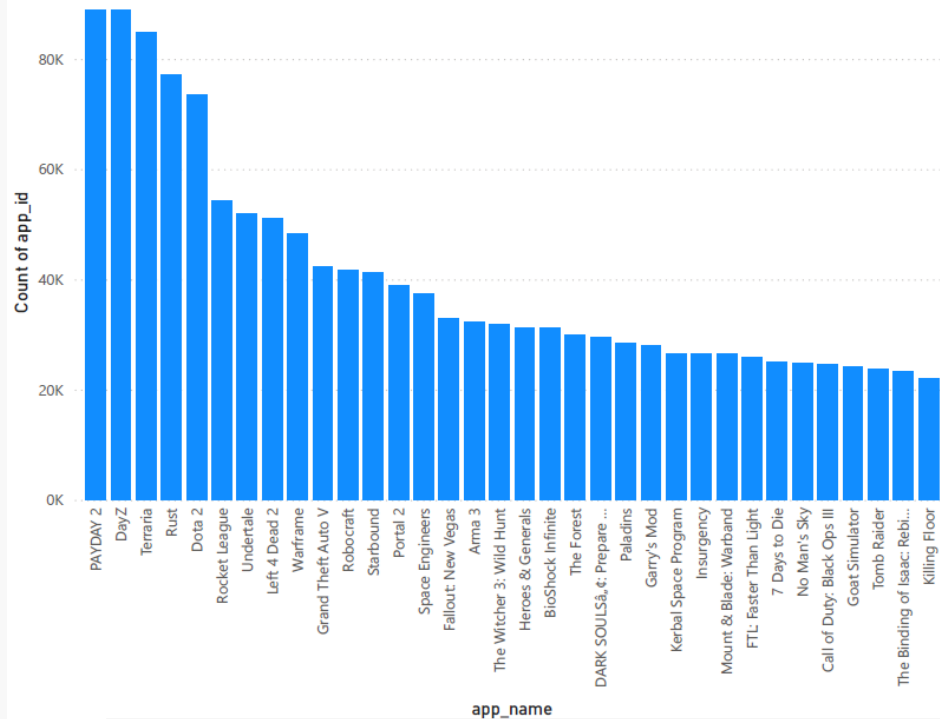
# Our Dataset

Objectives	Steam Review Dataset
Columns	String: app_id, app_name, review_text
	Binomial: review_score, review_vote
Volumn	Total rows: 6.42M
	Number of game: 9,972
Lincese	Attribution-NonCommercial 4.0 International (CC BY-NC 4.0)
	<u><a href="https://www.kaggle.com/datasets/steam-reviews">Steam Reviews (kaggle.com)</a></u>

# Our Dataset



Number of Review by app\_name



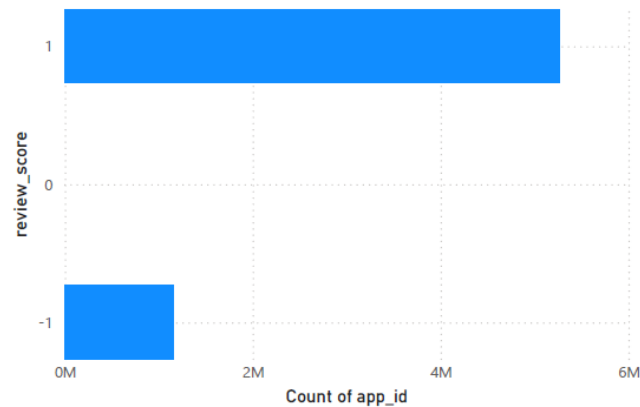
Number of Game

9972

Number of Review

6.42M

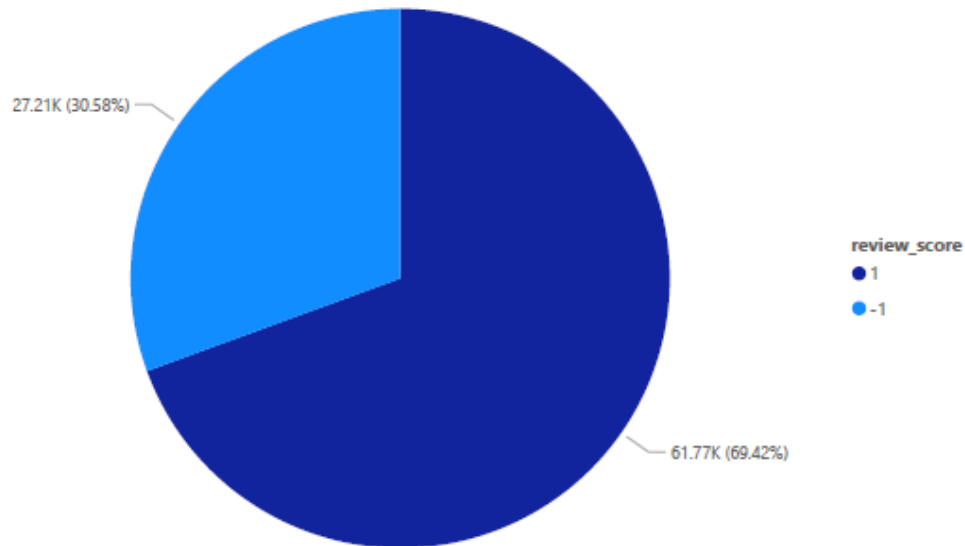
Number of Review by review\_score



# Our Dataset



Number of Review by review\_score



App\_ID

218620

First app\_id

Number of Review

88.97K

Count of app\_id

Game\_Name

PAYDAY 2

First app\_name

# Business Problem

“How can Steam generate insights from game reviews to improve the developers' game quality”



# Sentiment Analysis



To answer the question, we need to know the actual emotion in the review text.



## VADER Sentiment

Lexicon-based sentiment analysis tool that is specifically attuned to sentiments expressed in social media.



## Purpose

Reflecting the emotion score for every “review\_text”. And collect the negative score rows for the improvement strategy.



# Cleaning Process



## Before Sentiment

- Stripping
- Lower case

We want to keep the important words or punctuations that would hugely change the meaning of the text.

Text:

“it’s like csgo **but** it isn’t ??????????  
and you can get away with micspam.”

Score: -0.3724



# Cleaning Process

## After Sentiment

- Remove accented chars
- Expand contractions
- Remove special chars
- Remove stopword
- Lemmatization

After Sentiment analysis, we clean the text to a normalized format. It can offer us clear features in the text.

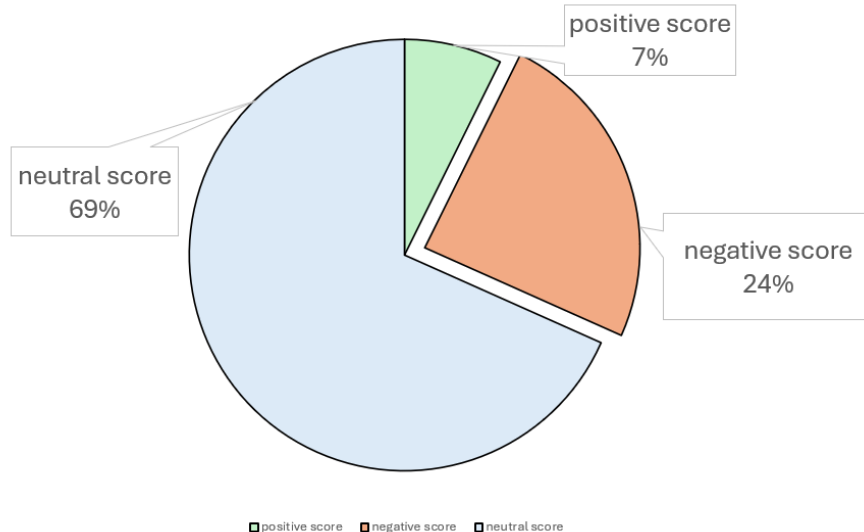
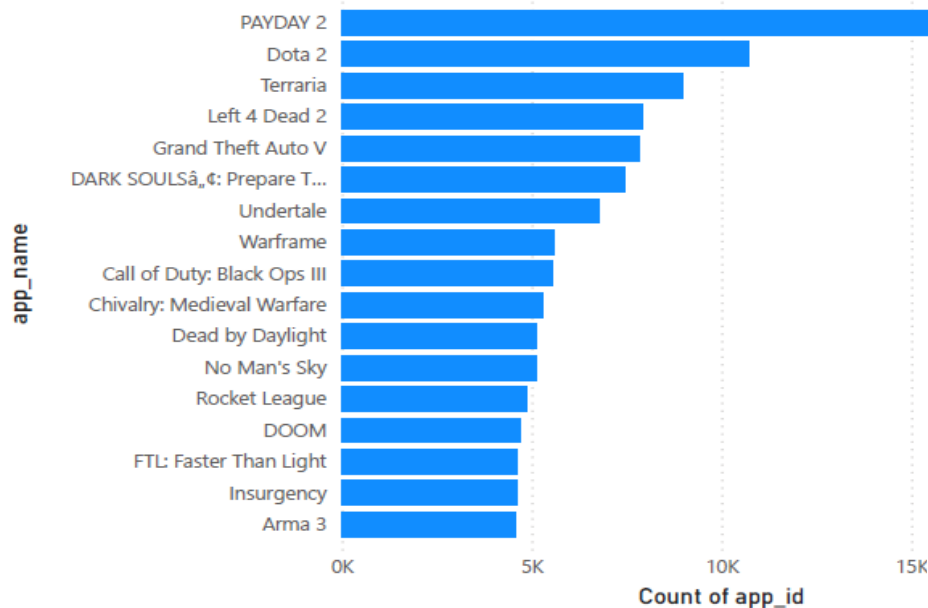
Text:

“no music hardware rendering unusable modern systems disappointed lucasarts steam”

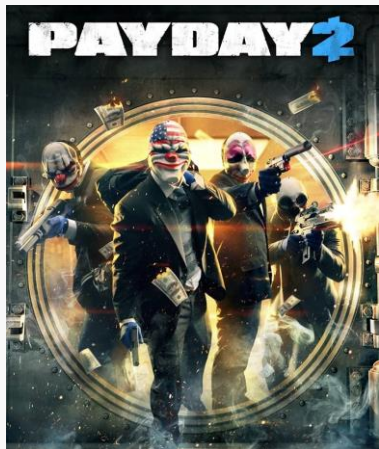
Score: -0.681

# After Cleaning Process

Count of app\_id by app\_name



# Example Game



## PayDay2

It is a cooperative first-person shooter video game. The player can participate in a variety of heists, including but not limited to robberies of banks, shops and armored cars, and producing and distributing narcotics.

## Why we choose this game?

Our goal is to provide solutions to the Steam company. Extract one of the games as an example so that Steam can use players' reviews to give substantial suggestions to game makers.



# Clustering Result

## Cluster 0

kill,steal,cook,money,cops,life,friends,stuff,meth,want,shoot,real,people,get,would,game,1010,banks,bank,rob

## Cluster 1

bad,community,devs,killed,good,developers,paid,said,lied,payday,would,added,never,ruined,dlc,not,overkill,no,game,microtransactions

## Cluster 2

payday,gun,want,overkill,would,skins,buy,global,get,weapons,money,offensive,dlcs,microtransactions,not,day,dlc,win,game,pay

## Cluster 3

not,game,thinking,httpforumssteampoweredcomforumsshowthreadphpt3127521,fool,producer,listo,2013,overkill,liars,almir,no,microtransactions,payday,made,thought,otherwise,clear,whatsoever,shame

## Cluster 4

dlcs,community,one,complications,tree,badge,220,foking,paywall,balls,update,good,new,cant,dont,play,1010,buy,game,sucks

## Cluster 5

time,payday,no,much,would,dlcs,really,fun,money,even,overkill,get,like,bad,play,buy,good,dlc,not,game

## Cluster 6

shoot,bad,dlc,fun,got,play,steal,not,like,stealth,drill,would,kill,money,payday,no,cops,get,1010,game

# Clustering Insight



the propaganda does not match the actual situation



over-reliance on paid services



purchasing DLC(downloadable content) does not improve the game experience



the gameplay and mechanics of the game are too monotonous

# Suggestion for PayDay2



Publish detailed developer logs to transparently show development progress and plans.



Launch complete content and increase the selling price. (Decrease DLC)



Provide a free trial version of DLC to increase purchasing transparency and motivation.



Encourage players to submit suggestions for future updates.



# Business Solution



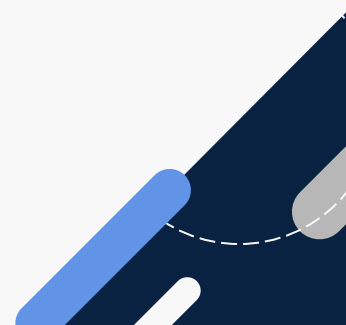
## Target Problem

Through clustering analysis,  
we can extract the problems  
in this game.



## Improvement

Using the theme problem of  
the game to generate  
improvement strategies





# Solution Process



# Text Mining Benefits



## Sentiment Analysis

Categorizes reviews by emotion (positive, negative).



## Keyword Extraction

Identifies common keywords (e.g., "war," "story," "multiplayer").



## Grouping

Set the same feature games to the same team to generate a business solution



# Future Proposal

01

## Enhanced User Experience

Robust, user-focused review system.

02

## Developer Insights

Pinpoints areas needing improvement

03

## Maintaining Quality

Dynamic filtering options for personalized review browsing.

04

## Marketing Strategies

Periodic trend reports to inform strategic decisions.

# Project Improvement



## Sentiment Analysis

### Topic Modeling

automatically  
discovers the main  
topics and issues

### Geographic Distribution Analysis

pinpointing specific  
regional problems

### User Persona Analysis

provides insights into  
the characteristics and  
needs of different user  
groups

**"A sword wields no strength  
unless the hands that hold it  
have courage."**

– The Hero's Shade, Legend of Zelda: Twilight Princess

