**Final Project: Party Animal Steam Game Review Analysis**

**Background:**

In this real business scenario, one of our team members is affiliated with a venture capital firm that invested in a gaming company two years ago. This company developed 'Party Animal,' an online party game. The venture capital firm has now reached a critical milestone where it must decide whether to double down on its investment in the company or maintain the initial funding level and consider future exit strategies. Part of this analysis involves collecting genuine customer feedback from Steam to gauge user sentiment. This will help the investment team verify whether the assumptions made during the initial investment regarding the game's market reception still hold true and if they meet or exceed expectations.

**Project Objective:**

For investors, analysing player feedback in detail poses a significant challenge. Reviews are often voluminous and contain a mix of qualitative insights and quantitative data, making it difficult to parse through manually. This project aims to dive into the reviews for "Party Animal" to extract meaningful insights regarding player satisfaction including aspects of the game players appreciate or dislike. Additionally, segmenting customers based on their engagement on Steam will facilitate the understanding of various target groups. This approach not only aims to enhance comprehension of player feedback but also to identify distinct preferences and expectations within the game's community.

**Analytics Approach:**

**A diagram of a data analysis process

Description automatically generated**Workflow Diagram

1. Data Acquisition: The data was retrieved from an API provided by [Steamworks](https://partner.steamgames.com/doc/store/getreviews). When specifying parameters, it's advisable to keep them simple by including only English-language reviews. Given that the game launched six months ago and may have initially received promotional or inauthentic reviews to generate viral attention, we have chosen to focus on reviews from the most recent 30 days. Furthermore, we only considered reviews from users who purchased the game directly from Steam to ensure the feedback reflects genuine player experiences as accurately as possible.
2. User segmentation: We begin by segmenting users into distinct groups based on behavioural attributes such as the number of games owned, the number of reviews written, and playtime. This segmentation utilizes KNN clustering to differentiate between various types of users, enabling a more targeted analysis of their perspectives.
3. Sentiment Analysis: Sentiment analysis is performed on user reviews using SpaCy and VADER to gauge the general sentiment towards "Party Animal." We employ Part-Of-Speech (POS) tagging to identify specific patterns (Noun + Adjective, and Noun, Verb, Adverb, Adjective) that highlight game-related attributes users mention in their reviews.
4. Attribute Identification: In this phase, we focus on pinpointing crucial game features that sway users' decisions to endorse the game. By examining the most significant 200 features identified through patterns of part-of-speech (POS) tagging, we utilize these features as predictive variables in a Random Forest classification model. The model's target variable is 'voted\_up', which signifies whether a user recommends the game or not. The objective is to prioritize these leading features according to their importance scores, reflecting their impact on user recommendation behaviour.
5. Feature Impact Analysis: To understand the impact of each identified game attribute, we perform logistic regression. The regression coefficients provide insights into the extent to which each feature influences users' recommendations. Features with positive coefficients are correlate with a higher probability of a user recommending the game and vice versa, the absolute value of a coefficient indicates the strength of its impact.

**Findings and Expected Impact**:

Text analytics offers insights from user feedback, enhancing investment due diligence with transparent, less biased, and market-relevant insights. Analysis of "Party Animal" reviews reveals both player clusters hold positive views, with endorsements often citing it as "fun" and "great." Conversely, criticisms focus on 'much inconsistency' and 'grey screen,' signalling a need for robust quality assurance. Addressing these issues while enhancing favoured elements could markedly improve reception and success. For a comprehensive market understanding, further steps should include competitor product review analysis to gauge "Party Animal's" standing in its genre. This comparison will help investors assess whether the game has the potential to be a leading contender. If "Party Animal" demonstrates potential to rank as a top game, investors might consider increasing their stake. Otherwise, maintaining the initial investment while strategizing an exit could be prudent. This balanced approach, informed by player feedback and competitive analysis, will guide effective investment decisions.