**Annotation Guidelines**

The Target-Based Sentiment Analysis (TBSA) dataset comprises 1,170 news articles sourced from the Bloomberg Terminal, concentrating on notable publicly traded corporations: Alphabet, Amazon, Netflix, and Nvidia. These companies constitute the dataset's principal targets. The aim is to categorize the sentiment directed at each target entity within stock-related texts from an investor's viewpoint. Sentiment is measured by a scoring system in which '1' indicates positive sentiment, '-1' denotes negative sentiment, and '0' indicates neutral sentiment.

The dataset is annotated at the document level, allowing for a thorough evaluation of sentiment towards each target over the full article, in contrast to sentence-level sentiment analysis. Each referenced entity in an article is assigned a unique sentiment score.

Three annotators are assigned to annotate the news texts. Initially, all annotators independently recognize the target entities within the 1,170 articles. Krippendorff's alpha is then computed to assess inter-annotator reliability on target identification. Upon achieving a satisfactory agreement, each annotator separately assesses a shared selection of 150 articles for sentiment annotation. The intercoder agreement is evaluated to guarantee consistency and compliance with established annotation requirements. After achieving a satisfactory agreement for sentiment annotation, the remaining texts are allocated evenly among annotators for individual sentiment labelling. In instances of uncertainties or disagreements, annotators participate in group discussions over Zoom to collectively resolve issues.

**Excel Spreadsheet**

Annotators employ an Excel spreadsheet with four columns: ID, Text, Target, and Sentiment Score. Their task entails meticulously reading each text, understanding the context, identifying the specified target entities (Amazon, Netflix, Nvidia, and Alphabet), and assessing the sentiment against each target. The relevant sentiment scores are thereafter documented in the respective column.

**Annotation Process and Guidelines**

The annotation process is structured into two stages: Target Entity Identification and Sentiment Annotation. Each stage follows specific guidelines to ensure consistency and accuracy.

**Stage 1: Target Entity Identification**

* Each text should be thoroughly reviewed to understand its context and identify any references to the target entities: Amazon, Netflix, Nvidia, and Alphabet.
* Entities may be referenced by their full names (e.g., Amazon, Netflix, Nvidia, Alphabet) or stock ticker symbols (e.g., AMZN, NFLX, NVDA, GOOGL).
* All relevant entities should be identified if a text mentions multiple target entities.
* If no target entity is mentioned, the text should be labelled as "no target."

**Stage 2: Sentiment Annotation**

* Assess the sentiment expressed in the text toward the target from an investor's viewpoint.
* Sentiment annotation should be based solely on the content of the text without reliance on external information.
* Each target entity identified in Stage 1 should be assigned a sentiment polarity label: '1' for positive, '-1' for negative, and '0' for neutral.
* The dominant sentiment should determine the final score if a target is portrayed with both positive and negative sentiment.
* If a target is mentioned without explicit sentiment or only in passing (e.g., within a list of companies), the sentiment should be classified as neutral.
* Assign a neutral (0) sentiment if the target is mentioned without a clear positive or negative context or if the sentiment is ambiguous or indeterminate.

Examples:

**ID 1:** Pioneer Disciplined Growth Fund/New boosted its holdings in Nike Inc. Class B and reduced its holdings in Amazon.com Inc. in July, according to data analyzed by Bloomberg. The fund's disclosed holdings rose 1.5% in value to $1.87 billion. Ashesh Savla and Craig Sterling manage the fund. Highlights: Amazon.com Inc. was the biggest investment, representing 4.2% of disclosed assets. Nine increased holdings, including: Nike Class B: 260,318 shares, up 142% to 443,370 valued at $48.9 million Danaher Corp.: 64,609, up 42% to 218,835 valued at $55.8 million Johnson Controls International Plc: 188,544, up 38% to 684,368 valued at $47.6 million Aptiv Plc: 61,569, up 22% to 343,749 valued at $37.6 million Keysight Technologies Inc.: 49,291, up 21% to 282,744 valued at $45.5 million. Eight decreased holdings, including: Amazon: 315,442 shares, down 35% to 584,421 valued at $78.1 million Alphabet Inc. Class A: 285,536, down 38% to 469,311 valued at $62.3 million Charles Schwab Corp.: 335,941, down 54% to 282,424 valued at $18.7 million Adobe Inc.: 38,771, down 34% to 75,220 valued at $41.1 million Digital Realty Trust Inc.: 109,146, down 29% to 273,469 valued at $34.1 million. Top holdings: Amazon: down 315,442, to 584,421 shares valued at $78.1 million AbbVie Inc.: unchanged at 516,602 valued at $77.3 million Home Depot Inc.: unchanged at 212,506 valued at $70.9 million Alphabet Inc. Class A: down 285,536, to 469,311 valued at $62.3 million Microchip Technology Inc.: unchanged at 610,586 valued at $57.4 million. Pioneer Disciplined Growth returned 19% in the past year, underperforming the 22% return of its benchmark, Russell 1000 Growth Index. The fund returned 14% on an annualized basis over the past ﬁve years.

(Target, Sentiment): **(Amazon, -1)**

**(Alphabet, -1)**

**Explanation:** The text in ID 1 reports that the Pioneer Disciplined Growth Fund/New reduced its holdings in Amazon, signifying a potentially less favorable view or a strategic reallocation away from the company. This adjustment, representing a 35% share decrease, indicates a negative sentiment in investment decision-making. Additionally, the text states that holdings in Alphabet Inc. Class A were reduced by 38%, a substantial reduction that reflects a negative sentiment or diminished confidence in Alphabet from an investment perspective.

**ID 2:** Amazon.com Inc.'s Flex delivery drivers fall under a transportation worker exemption, the Ninth Circuit said Friday, aﬃrming a lower court decision allowing the drivers to avoid arbitrating wage claims. The drivers are part of a class of workers engaged in interstate commerce, even if the tip-producing trips at the heart of their wage-and-hour allegations are purely local, so the Federal Arbitration Act’s transportation worker exemption applies, the court said in an unpublished opinion. The drivers accuse Amazon and subsidiary Amazon Logistics Inc. of failing to hand over all delivery tips to workers as promised. The trial court rejected Amazon’s motion to compel arbitration, prompting this appeal to the US Court of Appeals for the Ninth Circuit. The question of who falls under the FAA’s transportation worker exemption went before the US Supreme Court in 2022. In Southwest Airlines Co. v. Saxon , released that June, the high court expanded the carveout’s reach, although it still doesn’t apply to everyone who works for a company involved in interstate transportation, and litigation over who does qualify is ongoing. The First Circuit in 2022 rejected Postmates delivery drivers’ contention that they meet the exemption’s requirements, and a majority of the Second Circuit sitting en banc in February declined to rehear a case in which that court blocked Flowers Foods Inc. distributors from using it. However, the First Circuit sided with the distributors in a similar arbitration exemption case in May, and the appellate court rejected the company’s rehearing bid in that matter in June. Flex drivers aren’t the only Amazon workers ﬁghting to use the exemption to avoid arbitrating claims related to pay. The Fourth Circuit in July rejected a delivery service provider’s transportation worker exemption argument because there was no employment contract, and the Ninth Circuit heard oral argument in a similar case Aug. 24. Here, Amazon argued that a 2021 Ninth Circuit decision applying the exemption to other Flex drivers isn’t good law after Saxon. But the court in July held that the earlier case— Rittmann v. Amazon.com Inc. —""remains binding precedent,” the unsigned opinion said. The company alternatively argued that the Flex drivers here are diﬀerent from the ones in Rittmann because they can separately schedule interstate last-mile deliveries and purely local tip-producing deliveries. But the drivers here are part of the “exact same class of workers,” the opinion said. The FAA deﬁnes worker classes based on their “contracts of employment,” according to the opinion. The Flex drivers each have one employment contract which governs all of their work. “The nature of their individual claims does not change this analysis,” the court said.

(Target, Sentiment): **(Amazon, -1)**

**Explanation:** The text discusses a legal ruling unfavorable to Amazon, specifically affirming that Flex delivery drivers qualify for a transportation worker exemption. This exemption permits drivers to pursue wage claims in court rather than being required to enter arbitration. The court's rejection of Amazon's motion to compel arbitration highlights a setback for the company. Additionally, the text touches on ethical concerns, notably issues surrounding the handling of delivery tips, which further contributes to a negative portrayal of Amazon in terms of both legal and employee relations. Consequently, the appropriate polarity label for this text is negative.

**ID 3:** Netﬂix just rocked Wall Street by announcing its fourth-quarter results. The streaming giant added 13.1 million subscribers over the last three months, beating its own forecast of 9 million, and nearly 30 million new subscribers ﬂocked to the platform in 2023. Following the news, the company’s stock surged over 14%. You’d be forgiven for being shocked. Reports, polls and studies have told us that consumers are tired of paying for subscriptions and churn rates — or cancellations — have been on the rise. And yet, Netﬂix, as some have pointed out, is the reigning champion of the streaming wars. What’s its secret? For one, it didn’t listen to the grumblings of customers after announcing it was going to cut down on password sharing outside of households — once a pillar of its business model. When the streaming giant told shareholders in 2022 that password sharing was siphoning away 100 million subscribers and that it was going to crack down on it, viewers threatened to boycott. The latest numbers clearly show that the revolt didn’t quite pan out. Plus, the company had something major going for it: Cord-cutters, tired of paying for costly cable bundles, weren’t suddenly going to go back to cable because of Netﬂix’s changes. Its streaming plans are between $6.99 and $22.99 a month. The average monthly cable package can run you upwards of $200. Of course, the math isn’t only skewing in Netﬂix’s favor. Other streaming services are just as competitive compared to cable. But perhaps that’s where Netﬂix’s other strength shines: It’s not ﬁxated on trying to reinvent the wheel. When the company ﬁrst launched, it leaned heavily on doing so. For a while, it could hang its hat on the fact that it worked. It upended movie-rental chain Blockbuster and built its brand on taking risks on new content — shelling out millions for original ﬁlms, for example. In recent years, it proved to be unsustainable, and Netﬂix’s culture of ﬁlm innovation had to pivot. Now, it’s leaning into the same things that helped make the pre-streaming era of TV golden: dramas, sitcoms and reality TV. A look at the top 20 titles in Netﬂix’s engagement data, which was released in December, underscores this. The heavy hitters of 2023 included work from well-known showrunners, screenwriters and producers of network TV fame. Another indication of the trend was the recent departure of Scott Stuber — the well-respected and well-liked head of ﬁlm at Netﬂix. While prestige ﬁlms may still garner viewership, the focus appears to be shifting toward habit-forming content. It’s a move that aligns with the binge-watching culture that has become synonymous with streaming platforms. Viewers may still come for The Maestro, but they’ll likely stay for The Diplomat, Ginny & Georgia, Stranger Things, Love Is Blind, The Crown or WWE Raw. That last one, Netflix’s latest acquisition, doubles down on investing in mirroring what’s raking in views on TV: sports and live programming. The company spends nearly $17 billion a year on content, and this week it announced a 10-year, $5 billion licensing deal with WWE for its marquee show. The partnership doubled what the pro wrestling company had previously been getting from Comcast Corp.’s NBCUniversal. The ability to compete against heavy hitters in network TV for sports and live content is a game changer — a tipping point for streaming services and possibly the last nail in linear TV's coffin. We’re seeing that with how AppleTV+ streamed Major League Baseball’s Friday night games; Peacock, Max, and Amazon all streamed NFL games. But Netflix’s strategic expansion into various genres is a testament to its aspiration to be a comprehensive content provider rather than just a streaming service. There is something for everyone on Netflix. It’s a code that other providers haven’t quite cracked. That could help explain why its monthly cancellation rate is lower than other streamers, including Apple TV+, Disney+, Hulu and Max. A decade ago, Ted Sarandos, the co-CEO of Netflix, famously said that to succeed, Netflix would need to become like HBO before HBO became like Netflix. Today, Netflix is no longer focused on becoming like HBO; it’s becoming the entire cable bundle.

(Target, Sentiment): **(Amazon, 0)**

**(Netflix, 1)**

**Explanation:** The text underscores several achievements and strategic advantages Netflix has demonstrated in its business operations. Specifically, the company significantly exceeded its subscriber growth forecast, resulting in a notable increase in its stock price. The text further commends Netflix's resilience in addressing consumer concerns around subscription costs, the discontinuation of password sharing, and its strategic investments in content and expansion into various genres. Noteworthy among these is a partnership with WWE, which reinforces Netflix's strong competitive position within the streaming industry. Consequently, this text warrants a positive polarity label for Netflix. Additionally, Amazon is mentioned briefly about streaming NFL games alongside other services, a factual and neutral statement. Therefore, a neutral label is assigned to Amazon.

**ID 4:** Major US technology and internet stocks are lower on Friday, as investors digested a strong jobs report and the implications it could have for Federal Reserve policy. Read more: US Hiring Surges, Bolstering Case for Another Fed Rate Hike The Nasdaq 100 Index fell 0.7% Among megacap stocks: Apple -0.4%, Microsoft -0.2%, Amazon.com -1.1%, Alphabet -0.2%, Nvidia - 0.7% and Meta Platforms -0.7% The Nasdaq 100 is down 7.8% oﬀ a July peak, with concerns over Fed policy and rising Treasury yields pressuring valuations However, the weakness in tech has created some opportunities given the sector’s strong earnings prospects, according to UBS “With a rising contribution from AI, better base eﬀects, and pricing power, we expect global tech earnings to turn positive in the third quarter and grow by around 16% for full-year 2024,” writes Solita Marcelli, chief investment oﬃcer Americas at UBS Global Wealth Management, who adds that tech “should emerge as the fastest-growing segment within global equities next year” UBS is neutral on the sector, given concerns over valuation, but it writes that “beaten-down parts of the industry provide greater potential upside” The ﬁrm sees opportunities in “select semiconductor stocks,” as well as resilient parts of the sector, including the software, internet and services industries.

(Target, Sentiment): **(Amazon, -1)**

**(Nvidia, -1)**

**(Alphabet, -1)**

**Explanation:** The text indicates that Amazon's stock has decreased by 1.1%, representing a notable decline relative to other major technology stocks mentioned. This decrease is attributed to broader market conditions, including Federal Reserve policies, and rising Treasury yields, which imply a negative sentiment regarding market performance. Additionally, the text notes that Nvidia's stock has fallen by 0.7%, which is consistent with the overall downturn in the technology sector on the reported day. Like Amazon, this decline adversely affects investor sentiment and market performance. Furthermore, the sentiment surrounding Alphabet is also negative, with a recorded stock decline of 0.2%. Although this decrease is less pronounced than those of Amazon or Nvidia, it still indicates a downturn, contributing to the overall negative sentiment within the investment context.

**ID 5:** Nvidia Corp. shares are on pace for their longest streak of advances since a record-setting dash in December 2016, as the company announced updates to its artiﬁcial intelligence processors. Simone Foxman reports on Bloomberg Television.

(Target, Sentiment): **(Nvidia, 1)**

**Explanation:** The text outlines a positive performance trend for Nvidia, noting that the company's shares are on track to achieve their longest streak of increases since December 2016. This upward momentum is attributed to recent announcements regarding updates to Nvidia's artificial intelligence processors, which indicate strong investor confidence and a favourable market response to the company's technological advancements. Consequently, a positive polarity label regarding Nvidia is assigned to this text.

**Document ID 6:** Alphabet’s drop today illustrates how badly investors are punishing companies that miss earnings this season. Particularly Big Tech, which has driven gains in the stock market this year, showing there’s little room for disappointments. Shares of the Google parent have declined as much as 9.9% today. Even more astonishing is that the stock has only seen such a drop two other times (once during GFC and once in 2020) since it went public in 2004, based on closing levels. There was a lot riding on stellar earnings for tech behemoths, which are seen dragging the S&P 500 out of a proﬁts recession. Today’s selloﬀ in the broader stock market suggests a high degree of caution, as Wes Goodman noted earlier. It also puts more pressure on the remaining names from the S&P 500’s top cohort (Meta after the bell today, Amazon tomorrow, Nvidia in November) to deliver. Otherwise, a reckoning awaits traders.

(Target, Sentiment): **(Amazon, 0)**

**(Nvidia, 0)**

**(Alphabet, -1)**

**Explanation:** The text reports a significant decline in Alphabet's stock price following earnings miss, underscoring the severity of investor reactions during this earnings season. It highlights that such a considerable drop is uncommon, reflecting a high level of disappointment among investors, as similar occurrences have been infrequent since the company went public. Consequently, a negative polarity label concerning the Alphabet is assigned to this text. Furthermore, Amazon and Nvidia are mentioned in a forward-looking context, with expectations surrounding their upcoming earnings announcements. However, the sentiment directed toward these companies in this text remains neutral, as there are no reported outcomes or explicit sentiments regarding their current performance; rather, the text implies potential pressure and elevated expectations.

The targets are intended to be used as row labels. For example, in the cases mentioned above, we record the targets and their corresponding sentiment scores in the Excel sheet as follows:

|  |  |  |  |
| --- | --- | --- | --- |
| **ID** | **Text** | **Target** | **Sentiment Score** |
|  |  |  |  |
| 1 | Pioneer Disciplined Growth Fund/New boosted its holdings in Nike Inc. Class B and reduced its holdings in Amazon.com Inc. in July, according to data analyzed by Bloomberg. The fund's disclosed holdings rose 1.5% in value to $1.87 billion. Ashesh Savla and Craig Sterling manage the fund. Highlights: Amazon.com Inc. was the biggest investment…… | **Amazon** | -1 |
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