

Aggregated Data Report

Executive Summary

This report presents the findings from the data aggregation stage of the ad tech data challenge. This analysis focused on total impressions, revenue generation, and monetization efficiency. The following key performance indicators were calculated and are detailed in this report:

- Total Impressions by Site and Ad Type
- Average Revenue per Advertiser
- Revenue Share by Monetization Channel

These metrics were derived from a dataset containing adtech-related data following a process of extraction, cleaning, processing, and aggregation using Scala. The analysis provides valuable insights into the effectiveness of advertising campaigns and revenue generation strategies.

Total Impressions by Site and Ad Type

Total impressions were calculated by summing up the number of times an ad was displayed for each site and ad type. This provides a measure of how frequently ads are viewed, an important metric in assessing ad reach and effectiveness.

Sites 349 and 350, particularly with ad type 10, recorded the highest impressions, each surpassing 3 million.

Ad type 10 consistently achieved higher impressions across all sites, suggesting its broader appeal or effectiveness. In contrast, ad type 17 garnered fewer impressions, indicating it might be less popular or targeted.

Table: Total Impressions by Site and Ad Type

Site ID	Ad Type ID	Total Impressions
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342	10	743,752
342	17	36,304
343	10	1,940,766
343	17	29,636
344	10	903,306
344	17	26,928
345	10	2,060,968
345	17	76,802
346	10	2,351,090
346	17	60,378
347	10	703,394
347	17	18,640
348	10	322,748
348	17	46,082
349	10	3,586,356
349	17	100,850

350	10	3,340,460
350	17	49,760
351	10	2,602,706
351	17	101,846

This table represents the aggregated total impressions for each combination of site_id and ad_type_id.

Average Revenue per Advertiser

The average revenue for each advertiser was calculated by dividing their total revenue by the number of ad impressions or placements for each advertiser. This metric helps in understanding the revenue-generating efficiency of different advertisers.

Advertisers like IDs 16 and 79 show higher average revenues (\$0.2357 and \$0.1260, respectively), indicating more effective ad campaigns or placements, whereas several advertisers show minimal or no revenue.

Table: Average Revenue per Advertiser

Advertiser ID	Average Revenue
8	\$0.1109
16	\$0.2357
79	\$0.1260

84	\$0.0001
88	\$0.0255
90	\$0.0374
96	\$0.0279
97	\$0.0290
139	\$0.0014
2089	\$0.0000
2634	\$0.0772
2635	\$0.0000
2636	\$0.0000
2637	\$0.0000
2638	\$0.0000
2639	\$0.0000
2640	\$0.0000
2641	\$0.0000
2642	\$0.0000

2643	\$0.0000
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This table shows the calculated average revenue for each advertiser_id.

Revenue Share by Monetization Channel

The revenue share for each monetization channel was calculated by totaling the revenue generated from each channel and then determining its percentage contribution to the overall revenue.

Channel ID 19 stands out significantly with \$33,862.98, accounting for 85.59% of the total revenue, indicating its dominant role in revenue generation. However, Channels 2 and 21 have minimal to no revenue, suggesting they are less effective or underutilized in the current strategy.

Table: Revenue Share by Monetization Channel

Monetization Channel ID	Channel Revenue	Percentage Share
1	\$869.51	2.1978%
2	\$0.00	0.0%
4	\$4599.61	11.626%
19	\$33862.98	85.5923%
21	\$231.02	0.5839%

The table details the percentage share of total revenue across different monetization_channel_ids.

Conclusions

The analysis of total impressions, average revenue per advertiser, and revenue share by monetization channel provides key insights into advertising effectiveness. The high number of impressions for Ad Type 10 on sites 349 and 350, each surpassing 3 million, highlights its strong audience appeal. Advertisers should consider focusing more on this ad type for greater reach. In terms of revenue, advertisers like IDs 16 and 79, showing higher average revenues, indicate the success of their ad campaigns. However, the significant disparity in revenue generation across channels, with Channel 19 dominating at 85%, suggests a need for advertisers to re-evaluate and prioritize channels with higher revenue potential. Channels like 2 and 21, with minimal to no revenue, may require different strategies or reduced focus. Overall, a more balanced approach across various ad types and monetization channels is recommended to optimize reach and revenue.