

# Analyzing Business Problem

## Specialization: Marketing Analysis

### Task requirements

- Create a presentation centered around the dynamic weekday duration, focusing on differences between marketing campaigns.
- See whether you can apply 1-2 techniques learned in this or other modules throughout the course material to enhance your presentation on this subject.
- Explore the data. See whether there are interesting data points that can give more insights to your presentation.
- Provide analytical insights, what are the drawbacks of this analysis, what further analysis could you recommend?
- You should use the `turing_college.raw_events` table to answer this question.
- Write a SQL query that would extract data from BigQuery, make a visualisation using your preferred data visualisation tool (Google Sheets / Tableau / Looker Studio) and briefly comment your findings.
- As we do not have session identifiers in the dataset, you will have to come up with your own logic for how you will model sessions.
- Have in mind that a single user can come to your website on multiple days and if you were to calculate time on the website this may have an impact on this metric.

Marketing analysis is a crucial component of any successful business strategy. To effectively reach and engage your target audience, it's imperative to understand the performance of your marketing campaigns and user session times. This analysis involves evaluating the effectiveness of your marketing efforts during different time frames, including weekdays and various parts of the day, such as morning and afternoon.

By examining user session times and behavior patterns, you can gain valuable insights into when your audience is most active and responsive. This data allows you to optimize your marketing campaigns, ensuring that you reach your audience when they are most likely to be receptive to your messages. Additionally, it helps you allocate your resources efficiently and make data-driven decisions to enhance your overall marketing strategy. In a competitive business landscape, understanding these critical aspects of marketing analysis is key to staying ahead and maximizing your campaign's success.

In this analysis, we'll explain our methods and share insights on user session times per campaigns to enhance our website's performance and better understanding of users' behavior.

### 1. Main Questions

For the business to understand user session time and the times when they visit our website the most is crucial so for that reason, I raised a few questions.

For the business to understand users' behavior, session times per campaigns and which campaigns are more successful, I raised a few questions to the business to bring more understanding of the business from a marketing point of view.

- **How do users' session times differ in different periods?** Understanding how user session times vary across different time periods allows marketers to pinpoint the most active and receptive times for their audience. This knowledge can be used to schedule marketing activities for maximum impact and engagement.
- **How do users' session times differ on weekdays?** Weekdays often have distinct user behavior patterns compared to weekends. Recognizing these differences is crucial for tailoring marketing strategies, as it enables businesses to target their audience effectively during the workweek and adapt their messaging for weekends.

## 2. Prepare & Process

In the second part, I reviewed the data sources and assessed the type of data available. In the provided 'raw\_events' table, I examined the user interactions with our website, specifically looking at how customers engage with each step. I also identified instances where users had more than one session on our website. To address this, I implemented a system to separate a user's sessions if they remained inactive for 60 minutes or more before their next interaction. Additionally, I analyzed the 'adsense\_monthly' table, which contains information about campaigns that ran over a period and their associated costs.

Before calculating average session duration on certain weekdays and how that behavior differs across campaigns the overall sessions count by campaigns was estimated. The descriptive analysis of dataset shows that majority sessions are not in the campaigns we are planning to estimate but rather than in the non-paid traffic or in the segment we are not able to identify because of limited or not available tracking (Other, data deleted, null). Therefore, insights for campaigns should be considered critically and additional data investigation / improving of tracking is needed.

Additionally, I tried to estimate events funnel by duration for each step.

You can find queries for Average session duration [here](#) and for events funnel with session duration for each funnel step [here](#).

After extracting the data from the **raw\_events** and **adsense\_monthly** tables using a query, I created a Looker Studio dashboard. This dashboard will assist business owners and other departments in answering key questions more easily.

Link to the Looker Studio [dashboard](#).

## 3. Analyze & Share

For the primary analysis, I have created a Looker Studio Dashboard that enables users to interact effortlessly. By simply clicking on specific time intervals, campaigns, or choosing a particular date, end users can filter their results to address various inquiries related to customer purchase times. This user-friendly interface simplifies the process of exploring and comprehending the data.

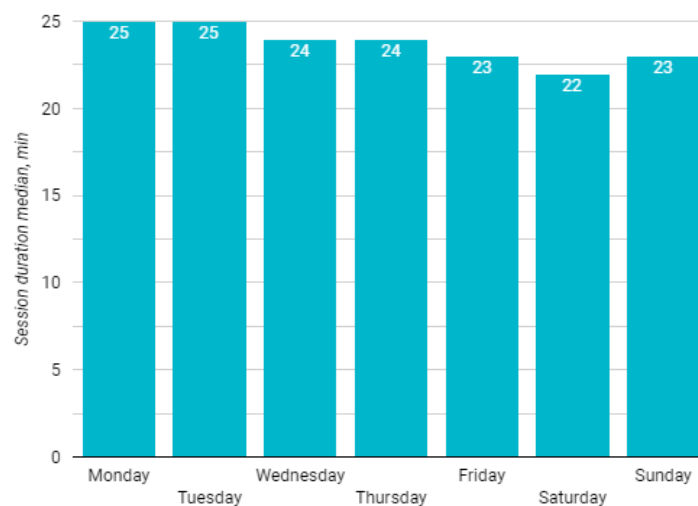
- **Main Business questions**

### **How do users' session times differ on weekdays?**

In the chart below we can see at which days people tend to spend more and spend more time on the website searching for the product. From the chart we can see that people on average spend less time searching for the product at the end of the week but have the most sessions on those days.

Most of the time people spend in the beginning and middle of the week where we can see that we have a lot of sessions.

On weekends we have on average more time spent on the website, but the least sessions on weekends as people tend to spend more time with friends and family members.



### **How does each marketing campaign perform?**

Assessing the performance of marketing campaigns is crucial for measuring their success how each campaign performed, and which campaigns performed better.

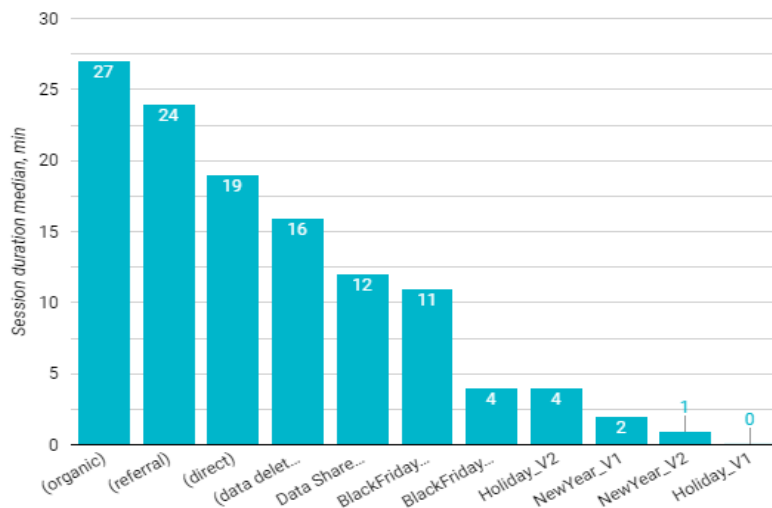
From the analysis we can see that:

The best marketing campaigns were holidays campaigns, both marketing campaigns users spend most of the time on the site looking for a gift for family members and friends and buying other goods they need.

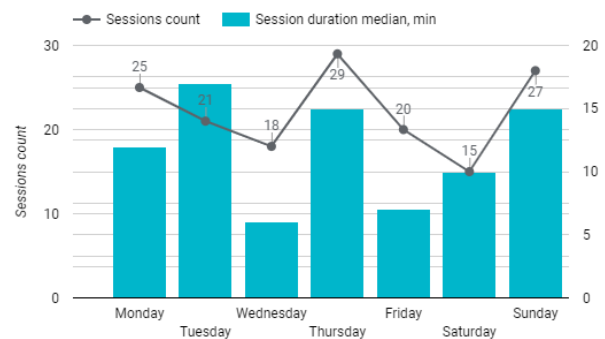
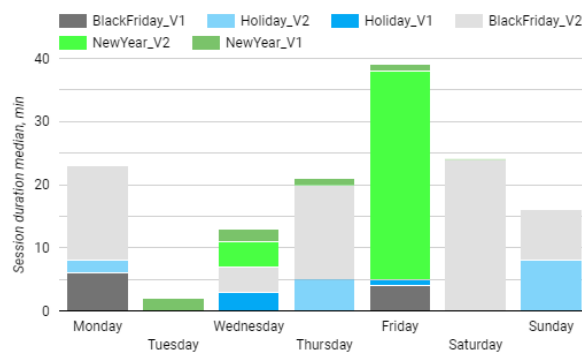
Secondly, we can see that the one of the black Friday (v2) campaign performed better than substantially Black Friday (V1) Campaign, even users which was brought by these campaigns spend the same amount of time, we can see that the V2 campaign was better, so we need to check what things we can implement from that campaign to our further campaigns.

Furthermore, the New year campaigns both perform not so great. As we can see, people in this campaign spend the least amount of time, generate the least amount of revenue and we can see the huge loss of return on investments.

In this position we need to rethink our new marketing campaigns approach, check from the analysis best times to push the content to users and of course, check if the campaign is relevant to the users.



It appears that the average session duration varies throughout the week. For example, on Fridays and Saturdays, the session duration is generally lower compared to other days of the week. In opposite, on Tuesdays and Thursdays the session duration is relatively higher, indicating higher user engagement on these days.



## 5. Key Insights

As from the analysis we now have a better picture of our customers session and they behavior from various campaigns.

### Here are some key insights:

- Overall Weekday Trends: beginning and middle of the week shows the highest engagement across all campaigns. Fridays and Saturdays exhibit lower average session durations, indicating decreased user engagement.
- Data Tracking Challenges: Descriptive analysis reveals that most sessions are not attributed to planned campaigns. Limited or unavailable tracking data (Other, data deleted, null) hinders a comprehensive understanding of user behavior.

