

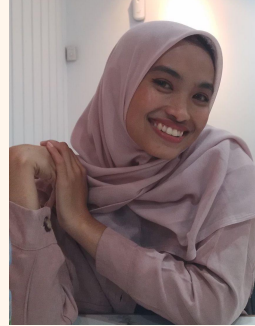


**Kampus
Merdeka**
INDONESIA JAYA

Hotel Booking Demand

**Presented By :
Group 30-Section Medan**

GROUP 30



Section Medan-Group 30

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Agenda

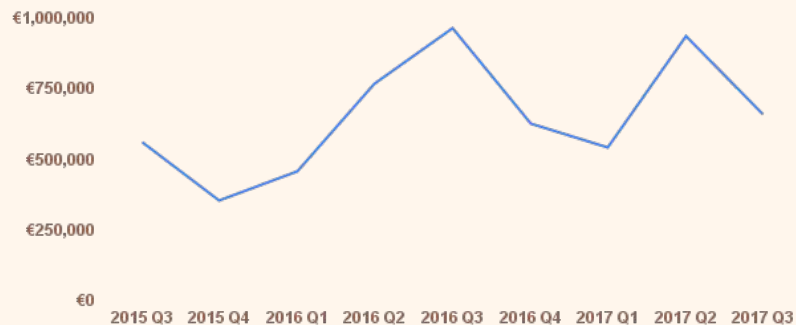
- Background and Business Overview
- Problem Statement
- Analysis Focus & Result
- Revenue
- ADR (Average Daily Rate)
- Total Booking
- Cancellation
- Insights and Recommendation

Background & Business Overview



- **Our business is growing** so much from 2016, we have **67% revenue increase** on Q2 2016
- **Our revenue always decline** by **35% - 36%** on Q4 from previous month based on 2015 and 2016 data
- Like revenue, **ADR Average** always **decline by 30% - 36%** on Q4 from previous month
- **Cancellation Rate** in the last two quartals **exceed 30%**, highest than any quartals from Q3 2015

Total Revenue Overtime



Objective:

How we can **prevent revenue decline on Q4 2017** from previous quartal by 15% ?

Quartal	Total Booking	Total Cancel	Cancellation Rate	ADR Average	ADR Progress	Total Revenue	Revenue Progress
2015 Q3	6414	1493	23.28%	€113.81	0.00%	€560,142	0.00%
2015 Q4	5824	974	16.72%	€72.80	-36.03%	€356,469	-36.36%
2016 Q1	8053	1647	20.45%	€72.20	-0.83%	€459,910	29.02%
2016 Q2	10495	2720	25.92%	€102.27	41.64%	€770,591	67.55%
2016 Q3	10720	3212	29.96%	€130.21	27.33%	€966,640	25.44%
2016 Q4	9881	2817	28.51%	€90.21	-30.72%	€625,607	-35.28%
2017 Q1	9335	2439	26.13%	€80.80	-10.43%	€543,884	-13.06%
2017 Q2	11721	3784	32.28%	€121.25	50.06%	€937,354	72.34%
2017 Q3	7104	2411	33.94%	€144.02	18.78%	€661,775	-29.40%



Problem statement

Situation

- Our revenue always declining on Q4 from previous quartal
- In 2016 we have 4 months declining revenue streak by 10% - 27% in each month

Problem

- Booking cancellation rate always above 25% from Q1 2016 until now, and reaching highest rate at above 30% in the last two months
- ADR Average always declining on Q4 by $\pm 30\%$ because of short of demand

Solution

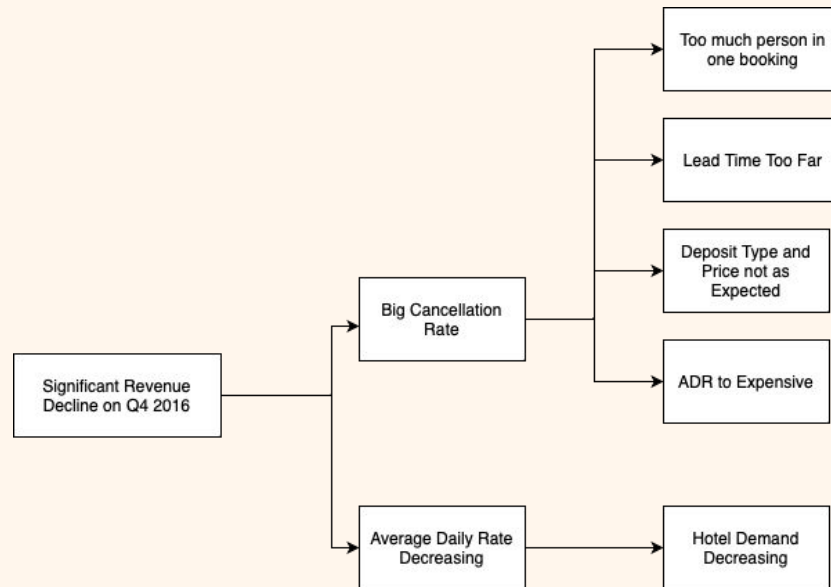
- We need to decrease cancellation rate to 20% - 25%
- Prevent ADR declining on Q4 above 15% from previous month

Analysis and Planning



Focus Analysis Data:

- **Revenue** : This metric really useful to tell us our financial and company condition overtime.
- **ADR** : This metric is one of the biggest influence of our revenue, by using this metric we can understand more about our revenue progression
- **Total Booking** : With this metric we can find how much customer and potential customers we can get
- **Cancellation** : The purpose of using this metric is to find out how much booking we lose because cancellation



Methodology:



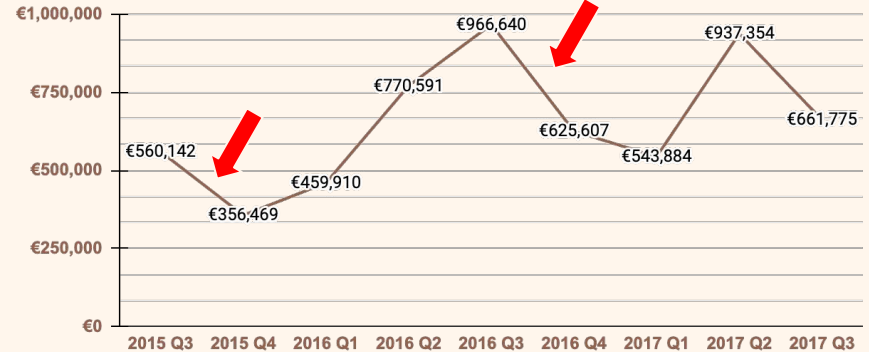
Revenue



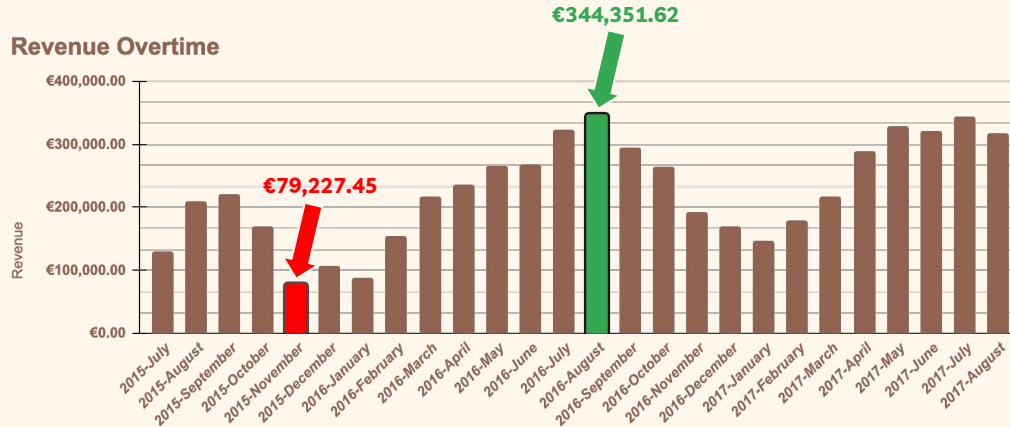
TOTAL REVENUE
€5,882,370.84

- Our **total revenue** from July 2015 to August 2017 is **€5,882,370.84**
- The data show that **revenue in quarter 4** will always **decrease compared to the previous quarter**

Total Revenue Overtime



Revenue Overtime



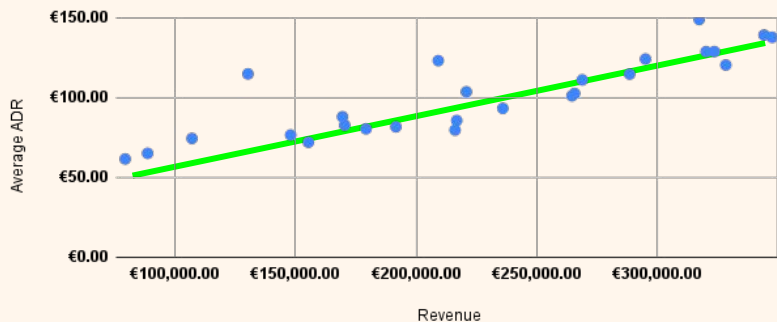
- **Highest Revenue** is **€344,351** on August 2016
- **Lowest Revenue** is **€79,227** on November 2015
- **Over 73%** is more than **€200k** revenue/month

ADR (Average Daily Rate)



Revenue - Average ADR Relationship

Higher ADR produce higher Revenue

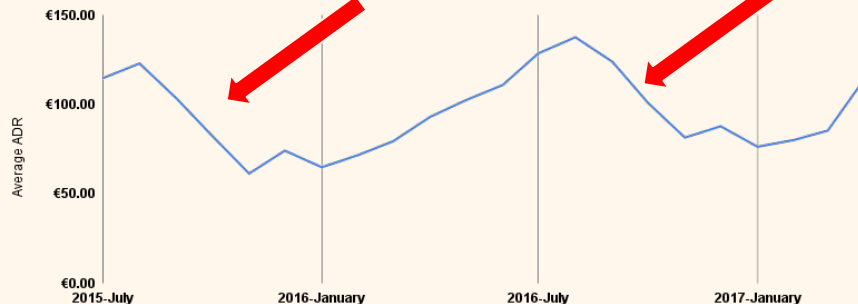


- Unfortunately like the revenue, **ADR always fall significantly on September to November**
- We believe that the **significant decline in ADR** is one of the biggest reasons our **revenue always falls in Q4**

- We can see that **ADR is the biggest influence** over our **revenue**
- Data show The bigger the ADR, the bigger the revenue we can get
- Our **highest ADR Average** is €148.86 and **ADR with highest Revenue** is €137.75

Average ADR Overtime

Showing ADR Declining on Q4

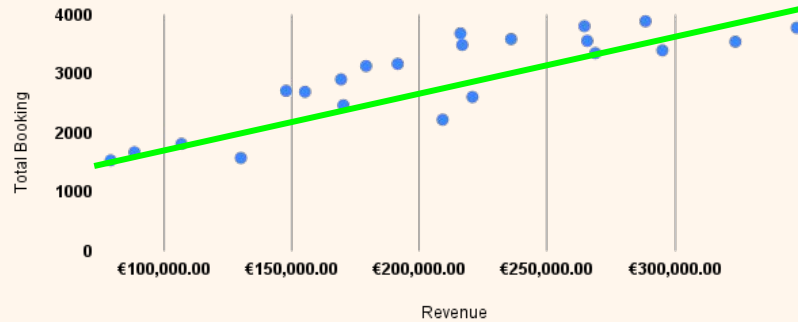


Total Booking

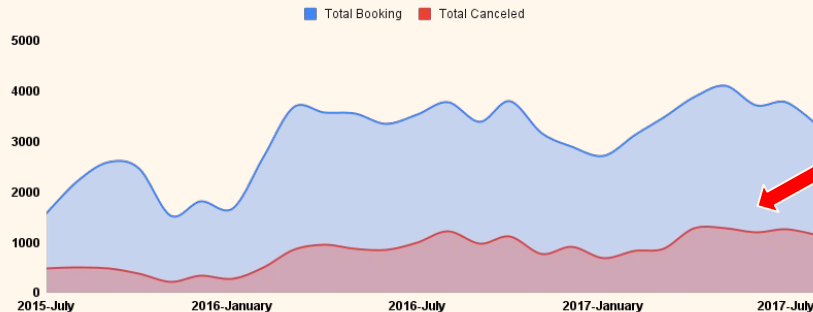


Total Booking - Revenue Relation

Higher booking rate produce higher revenue



Total Booking & Total Canceled Overtime



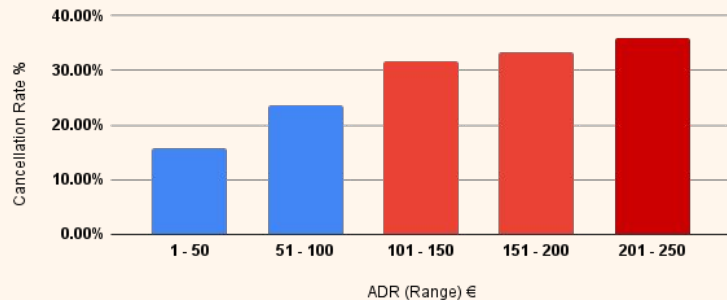
- We can see that **Total Booking is really affecting our revenue growth**
- Higher total booking will trigger **increase of ADR** too, and ADR is the biggest influence of revenue
- **Total booking decline** on Q4 2016 **not really significant** compare to our revenue decline on the same quartal
- Despite the high total booking, our **cancellation rate is considerably** high around 25% - 34%
- **Cancellation rate reach the highest** state on the last two quartal at 33% - 34%

Cancellation

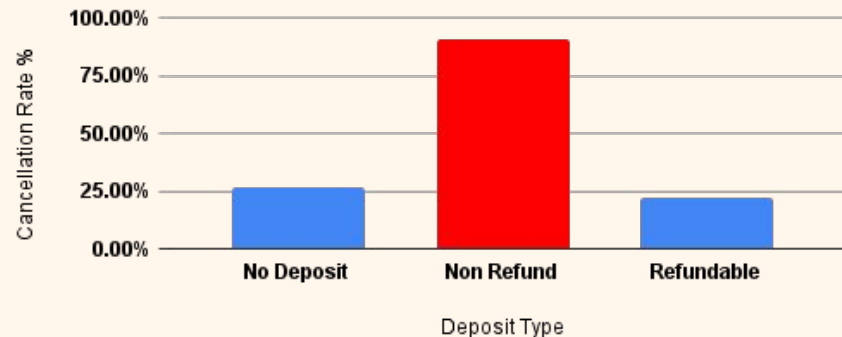


ADR (Range) VS Cancellation Rate

Higher ADR trigger cancellation rate



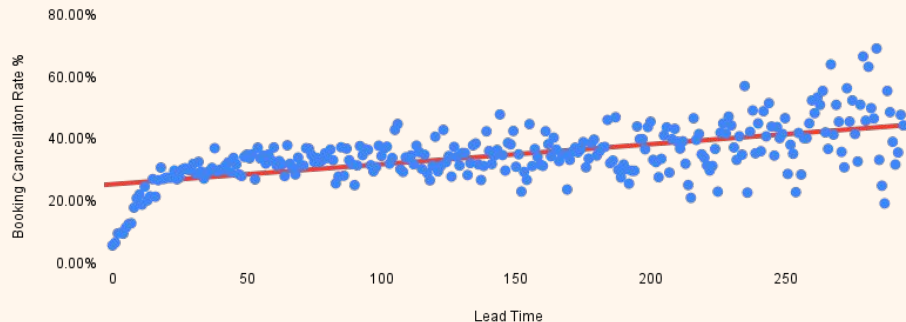
Deposit Type VS Cancellation Rate



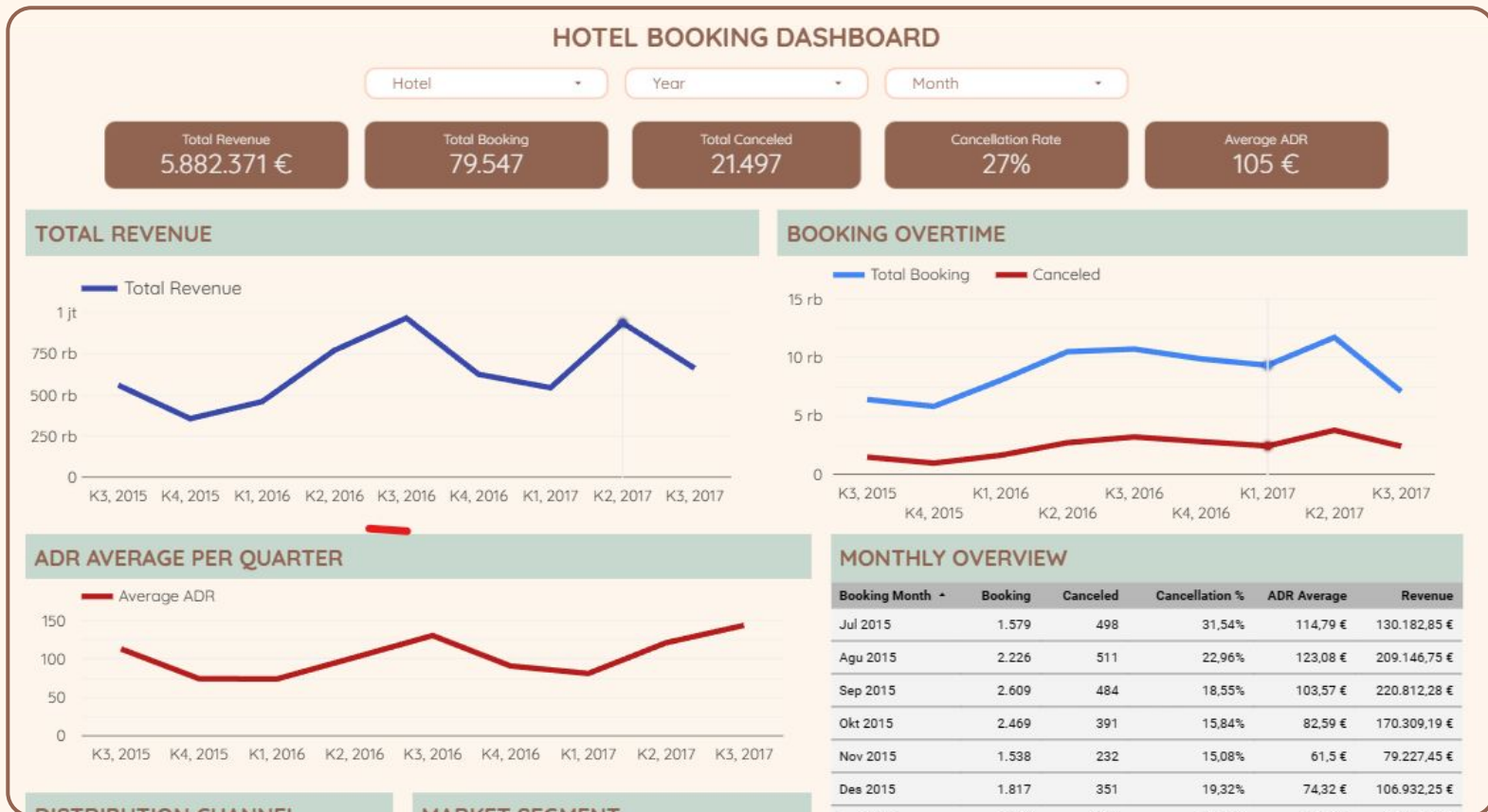
- **Higher ADR** seems to trigger more cancellation rate (Top Left Chart)
- **Non Refund Deposit Type** have 90.69% cancellation rate (Bottom Left Chart)
- **Longer Lead Time** more likely to trigger more cancellation too, and cancellation become more stagnant after 18 days lead time. (Bottom Right Chart)

Lead Time - Cancellation Rate Relation

Longer lead time produce higher cancellation rate



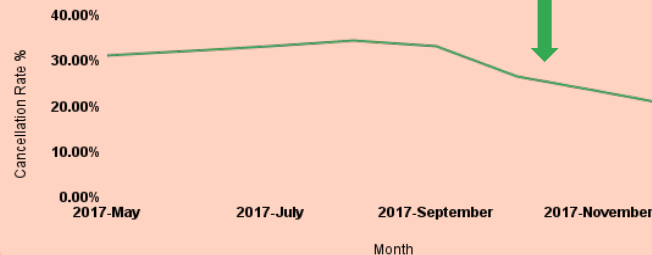
Data Visualisation



Insights and recommendations



Cancellation Rate Decreasing



Decrease cancellation rate

- Remove Non Refund deposit type from our product to minimize cancellation rate
- Give **uncancelled Booking Discount or Promo** to trigger user retention and secure not cancelable booking

ADR Decline Rate Decreasing



Increase demand to stabilize ADR Average above €100

- Partner with local governments for **cultural festivals** or team up with concert producers/artists for citywide **music events**
- **Provide Coupons** to Checkout Customers to entice customers to stay at our hotel again

Appendix



	A	B	C	D	E	F	G	H	I	J	K	L	M	N
1	hotel	is_cancelled	lead_time	arrival_date	arrival_date	arrival_date	stays_in_week	stays_in_week	adults	children	babies	meal	country	
2	Resort Hotel	0	7	2015 July	27	1	0	1	1	0	0	BB	GBR	
3	Resort Hotel	0	13	2015 July	27	1	0	1	1	0	0	BB	GBR	
4	Resort Hotel	0	37	2015 July	27	1	1	1	1	0	0	BB	GBR	
5	Resort Hotel	0	2	2015 July	27	3	2	2	1	0	0	BB	PRT	
6	Resort Hotel	1	51	2015 July	27	4	0	1	1	0	0	HB	PRT	
7	Resort Hotel	1	36	2015 July	27	4	0	1	1	0	0	BB	PRT	
8	Resort Hotel	0	9	2015 July	28	5	1	0	1	0	0	BB	DEU	
9	Resort Hotel	0	2	2015 July	28	5	1	0	1	0	0	BB	PRT	
10	Resort Hotel	0	9	2015 July	28	5	1	0	1	0	0	BB	DEU	
11	Resort Hotel	0	96	2015 July	28	5	4	10	1	0	0	HB	GBR	
12	Resort Hotel	1	86	2015 July	28	6	2	5	1	0	0	HB	PRT	
13	Resort Hotel	0	80	2015 July	28	6	3	8	1	0	0	BB	FRA	
14	Resort Hotel	0	0	2015 July	28	7	0	1	1	0	0	BB	GBR	
15	Resort Hotel	0	0	2015 July	28	8	0	1	1	0	0	BB	PRT	
16	Resort Hotel	0	16	2015 July	28	9	1	3	1	0	0	BB	RUS	
17	Resort Hotel	0	44	2015 July	28	10	2	5	1	0	0	HB	RUS	
18	Resort Hotel	0	0	2015 July	28	11	0	1	0	0	0	BB	GBR	
19	Resort Hotel	0	0	2015 July	29	13	1	3	1	0	0	BB	PRT	
20	Resort Hotel	0	32	2015 July	29	13	1	5	1	0	0	HB	PRT	
21	Resort Hotel	0	1	2015 July	29	14	0	1	1	0	0	BB	PRT	
22	Resort Hotel	1	112	2015 July	29	14	2	5	1	0	0	BB	PRT	
23	Resort Hotel	0	0	2015 July	29	14	0	1	0	0	0	BB	PRT	
24	Resort Hotel	0	57	2015 July	29	15	0	2	1	0	0	FB	PRT	
25	Resort Hotel	0	57	2015 July	29	15	0	2	1	0	0	FB	PRT	
26	Resort Hotel	1	48	2015 July	29	16	0	1	1	0	0	BB	PRT	

Capstone Project Grup 30 Ipy...
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Clean Outlier Data
A. Find Outlier Range
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Finish
Exporting

Data Cleaning

Before we analyze the data, we need to make sure the our dataset is clean from empty value, duplicated and outliers

1. Clean Empty Value Data

The first step we need to do is make sure to delete empty data in important column, for this step we need to search any empty value and 'Undefined'. For this step, I will make exception to not delete empty data in specific column because that column is not really important and will not affect our analyst.

A. Import Pandas and Import Dataset into Pandas Data Frame

To use pandas library we need to import pandas library first, for the dataset I already upload the dataset into my google drive, so we just need to import the file from google drive. We need to copy our dataset file path so pandas can find the file

```
[ ] # Import Pandas Library
import pandas as pd

# Importing CSV from google drive to Pandas (copy your file path in parameter below)
hotel_booking = pd.read_csv('content/drive/MyDrive/Revvo_Group_30/hotel_bookings.csv')
hotel_booking.head() # Show Previous of our dataset
```

```
hotel  is_cancelled  lead_time  arrival_date_year  arrival_date_month  arrival_date_week_number  arrival_date_day_of_month
0      Resort      0         342             2015              July                27
```

Hotel Booking Datasets

Data Cleaning Syntax

HOTEL BOOKING DASHBOARD

Hotel: Year: Month:

Total Revenue: 5,882,371 € Total Bookings: 79,547 Total Cancelled: 21,497 Cancellation Rate: 27% Average ADR: 105 €

TOTAL REVENUE

Line chart showing Total Revenue (blue line) over time from K3, 2015 to K3, 2017. The y-axis ranges from 0 to 1,000,000 €.

BOOKING OVERTIME

Line chart showing Total Booking (blue line) and Cancelled (red line) over time from K3, 2015 to K3, 2017. The y-axis ranges from 0 to 15,000.

ADR AVERAGE PER QUARTER

Line chart showing Average ADR (red line) over time from K3, 2015 to K3, 2017. The y-axis ranges from 0 to 150 €.

MONTHLY OVERVIEW

Booking Month	Booking	Cancelled	Cancellation %	ADR Average	Revenue
Jul 2015	1,579	499	31.54%	114.794	180,182.85 €
Aug 2015	2,024	511	25.24%	103.047	208,144.72 €
Sep 2015	2,409	484	19.97%	103.574	249,613.28 €
Oct 2015	2,489	391	15.64%	82.394	170,308.19 €
Nov 2015	1,938	232	11.96%	81.54	79,227.63 €
Dec 2015	1,817	331	18.22%	74.324	106,912.17 €

Looker Dashboard

Thank You

