

Think Ahead

ACCA

Dataset overview: Dream Destination

Machine learning with Python
for finance professionals

Case Study – Dream Destination – Factsheet

❑ **Name / location / industry:** *Dream Destination, Singapore, online hotel booking portal.*

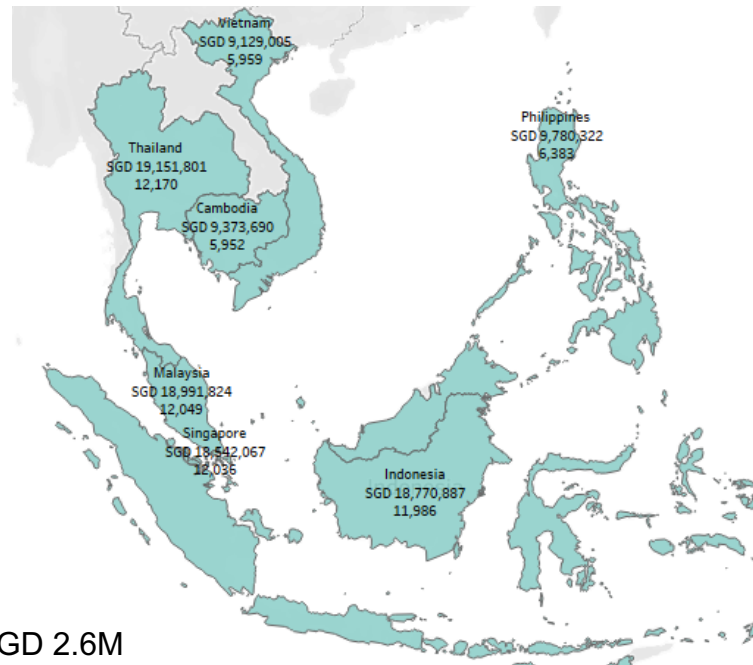
❑ **Countries served:** Singapore, Cambodia, Indonesia, Malaysia, Philippines, Thailand, and Vietnam.

❑ **Stats:**

- 600 hotels, 199 cities, 20 countries.
- Served 200K rooms to 300K people in the last 10 years.
- 50+ full time employees and 30+ part time/contractual employees.

❑ **Sales:**

- In 2019, it posted total sales of SGD 13M with a profit of SGD 2.6M
- Over last 10 years, average annual sales of SGD 9M and average annual profit of SGD 1.7M
- Average CAGR of 8.3% against the industry CAGR of 6.6%



Case Study – Dream Destination

Problem statement

- ❑ The senior management team of *Dream Destination* have tasked the Analytics team to review the current company performance in order to make strategic decisions. This requires an increased ability to create ad-hoc analysis and automated reporting for the senior leadership to aid and optimise business development decisions.
- ❑ Python and its data analytics ecosystem of libraries such as pandas were identified as essential skills to bring into the company. They enable powerful yet rapid ad-hoc data analysis capabilities, support the creation of fully automated reports and business intelligence tooling, and integrate with other core technologies for machine learning and API development.
- ❑ The Analytics team have reviewed previous analyses to identify the most useful dimensions and measures for evaluating company performance. These data have been extracted from their booking system's database. You will be presented with two tables: the **Orders** table contains one row per order (for example, booking ID, booking date, customer age, hotel name); the **Finance** table contains one row per transaction (for example, booking ID, payment method, GST, profit margin).

Case Study – Dream Destination – Database Summary

Dream Destination Portal has an online database management system that keeps track of each transaction. The Dream Destination has two systems, one for Order Management and another for Finance Management, thus we have two databases for the analysis. The database extracted from these systems will be used for analysis

Order Database Table

S.No.	Variables	Description
1	Booking ID	Unique Booking ID
2	Date of Booking	Date of the Booking
3	Year	Year of the Booking
4	Time	Time of the Booking
5	Customer ID	Unique ID of the booking customer
6	Gender	Gender of the customer
7	Age	Age of the customer
8	Origin Country	Country of the customer
9	State	State of the customer
10	Location	City of the customer
11	Destination Country	Destination country where the customer trip
12	Destination City	Destination city where the customer trip
13	No. Of People	Number of people going on the trip
14	Check-in date	Check-in date for trip
15	No. Of Days	Number of days of visit
16	Check-Out Date	Check-out date of trip
17	Rooms	Number of room booked
18	Hotel Name	Hotel name where the booking is made
19	Hotel Rating	The hotel rating

Finance Database Table

S.No.	Variables	Description
1	Booking ID	Unique Booking ID
2	Date of Booking	Date of the Booking
3	Year	Year of the Booking
4	Time	Time of the Booking
5	Customer ID	Unique ID of the booking customer
6	Origin Country	Country of the customer
7	State	State of the customer
8	Location	City of the customer
9	Payment Mode	Mode of payment
10	Bank Name	Payee Bank name
11	No. Of Days	Number of days of visit
12	Rooms	Number of room booked
13	Booking Price[SGD]	Total Booking Charges
14	Discount	Discount %
15	GST	Goods and Service Tax %
16	Profit Margin	Profit Margin %

Case Study – Dream Destination – Order Database

Booking ID	Date of Booking	Year	Time	Customer ID	Gender	Age	Origin Country	State	Location	Destination Country	Destination City	No. Of People	Check-in date
DDMY00001	1/1/2010	2010	10:49:40	MY00001	Male	42	Malaysia	Johor	Iskandar Puteri	Denmark	Horsens	1	1/12/2010
DDID00002	1/1/2010	2010	09:19:47	ID00001	Female	44	Indonesia	Ciawi	West Java	Colombia	Medellin	3	1/21/2010
DDSG00003	1/1/2010	2010	11:52:56	SG00001	Female	31	Singapore	Central	Rochor	Germany	Munich	3	1/2/2010
DDSG00004	1/1/2010	2010	13:44:40	SG00002	Male	28	Singapore	North	Yishun	Canada	Montreal	3	2/15/2010
DDKH00005	1/1/2010	2010	05:38:26	KH00001	Male	44	Cambodia	Phnom Trop	Pursat	Kenya	Nairobi	5	1/3/2010
DDTH00006	1/1/2010	2010	05:41:55	TH00001	Male	32	Thailand	Chiang Mai	Chiang Mai	Canada	Toronto	2	1/28/2010
DDTH00007	1/1/2010	2010	20:14:21	TH00002	Male	49	Thailand	Surat Thani	Surat Thani	Iran	Tehran	3	3/15/2010
DDMY00008	1/1/2010	2010	00:22:07	MY00002	Female	58	Malaysia	Sarawak	Kuching	Egypt	Port Said	4	1/3/2010
DDSG00009	1/1/2010	2010	09:30:32	SG00003	Male	57	Singapore	North	Mandai	Egypt	Luxor	4	4/9/2010
DDSG00010	1/1/2010	2010	16:22:39	SG00004	Female	41	Singapore	West	Tengah	France	Marseille	4	1/7/2010
DDTH00011	1/1/2010	2010	05:04:33	TH00003	Female	28	Thailand	Rayong	Rayong	New Zealand	Auckland	6	1/11/2010
DDMY00012	1/1/2010	2010	02:25:07	MY00003	Male	40	Malaysia	Kedah	Alor Setar	Japan	Nagoya	7	1/2/2010
DDVN00013	1/1/2010	2010	03:02:21	VN00001	Male	37	Vietnam	Da Nang	Da Nang	Italy	Bari	3	2/17/2010
DDKH00014	1/1/2010	2010	07:39:36	KH00002	Female	40	Cambodia	Kamchay Mear	Prey Veng	Israel	Haifa	4	2/25/2010
DDKH00015	1/2/2010	2010	14:48:30	KH00003	Male	51	Cambodia	Kandal	Kandal	Iceland	Kopavogur	5	1/3/2010
DDVN00016	1/2/2010	2010	13:05:46	VN00002	Female	25	Vietnam	Da Nang	Da Nang	France	Lyon	6	2/3/2010
DDSG00017	1/2/2010	2010	14:37:10	SG00005	Male	33	Singapore	Central	Toa Payoh	Germany	Hanover	6	1/12/2010
DDPH00018	1/2/2010	2010	21:17:13	PH00001	Female	25	Philippines	Isabela	Cauayan	Brazil	Fortaleza	3	1/3/2010
DDMY00019	1/2/2010	2010	13:27:10	MY00004	Female	33	Malaysia	Johor	Johor Bahru	Mexico	Ecatepec	2	1/14/2010
DDSG00020	1/2/2010	2010	02:44:43	SG00006	Female	31	Singapore	North	Sembawang	New Zealand	Tauranga	5	2/23/2010
DDSG00021	1/2/2010	2010	13:23:11	SG00007	Female	32	Singapore	Central	Novena	Mexico	Puebla City	5	1/3/2010
DDID00022	1/2/2010	2010	20:34:37	ID00002	Female	36	Indonesia	Cimanggis	West Java	Japan	Nagoya	5	1/19/2010
DDSG00023	1/2/2010	2010	23:23:23	SG00008	Female	58	Singapore	Central	Marine Parade	New Zealand	Manukau	2	2/5/2010
DDMY00024	1/2/2010	2010	12:53:50	MY00005	Female	47	Malaysia	Kedah	Alor Setar	Maldives	Naifaru	1	1/14/2010



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