

# UI & Conceptual Database Design

Database Management System

(COP5725)

Fall 2019

Instructor: Dr. Markus Schneider

TA: Kyuseo Park

***Sales Analysis on Olist Store***

By group #2: Junyi Xie, Hongyi Song, Tianyu Jia, Guozhi Wang

# User Interface Design

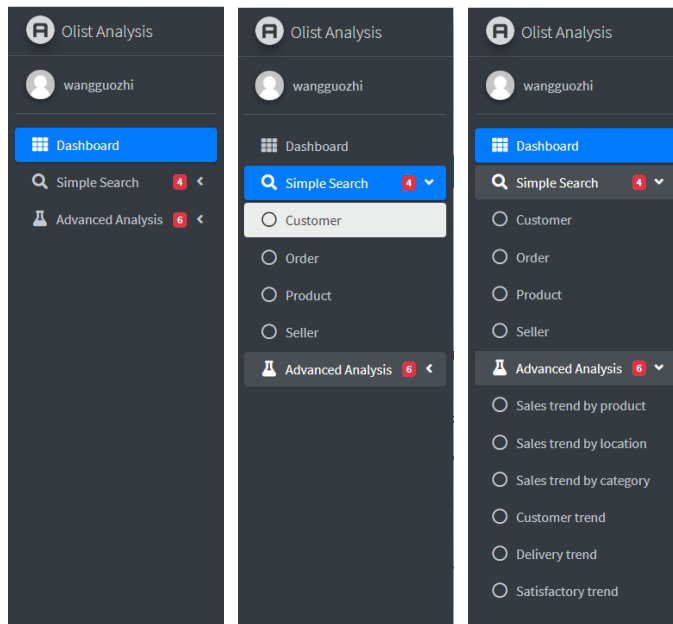
## URL structure

- 1 /
  - 1.1 /login
  - 1.2 /register
  - 1.3 /error
- 2 /simple
  - 2.1 /simple/customer
  - 2.2 /simple/order
  - 2.3 /simple/product
  - 2.4 /simple/seller
- 3 /advanced
  - 3.1 /advanced/sales\_trend\_by\_product
  - 3.2 /advanced/sales\_trend\_by\_location
  - 3.3 /advanced/sales\_trend\_by\_category
  - 3.4 /advanced/customer\_trend
  - 3.5 /advanced/delivery\_trend
  - 3.6 /advanced/satisfactory\_trend

## UI details

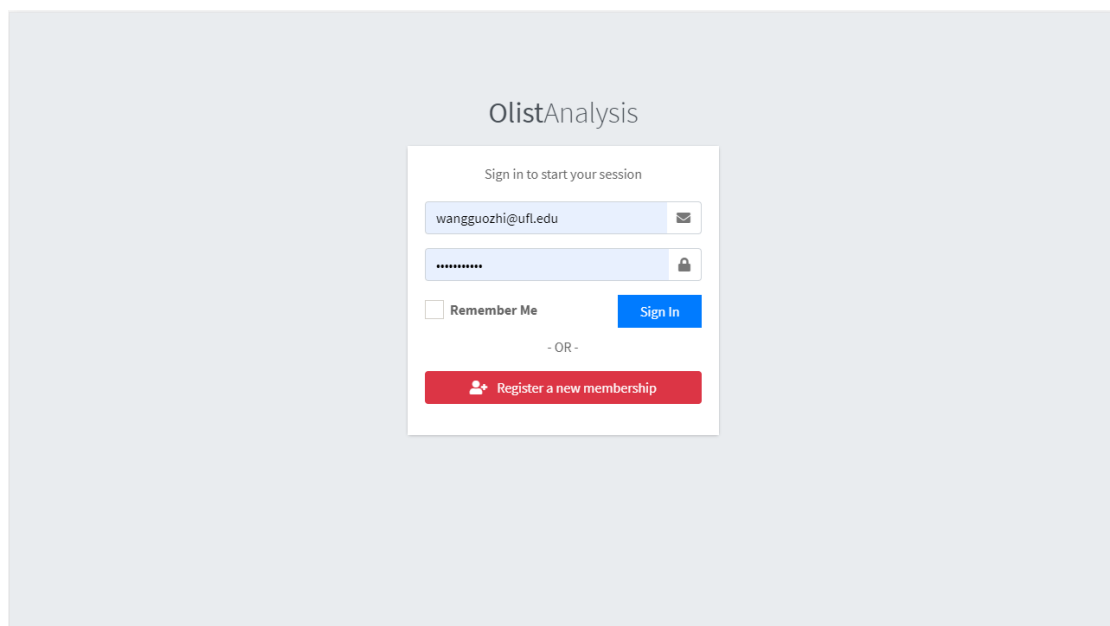
We have implemented some pages, so screenshots of them are given. The other pages are described by hand drawing diagrams.

In the website, a side menu will be the center of flow. Except login, register and error pages, all pages can be visited by clicking the items in the side menu. The complete diagram of flow will be too complex because every page will be connected in this menu. Instead, we will describe every page independently. The menu is shown below.



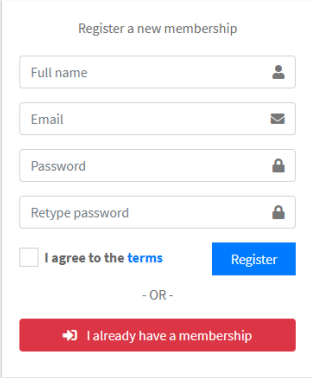
### 1.1 /login

- Press "Sign In" → login and redirect to 1 (dashboard).
- Press "Register" → Jump to 1.2



## 1.2 /register

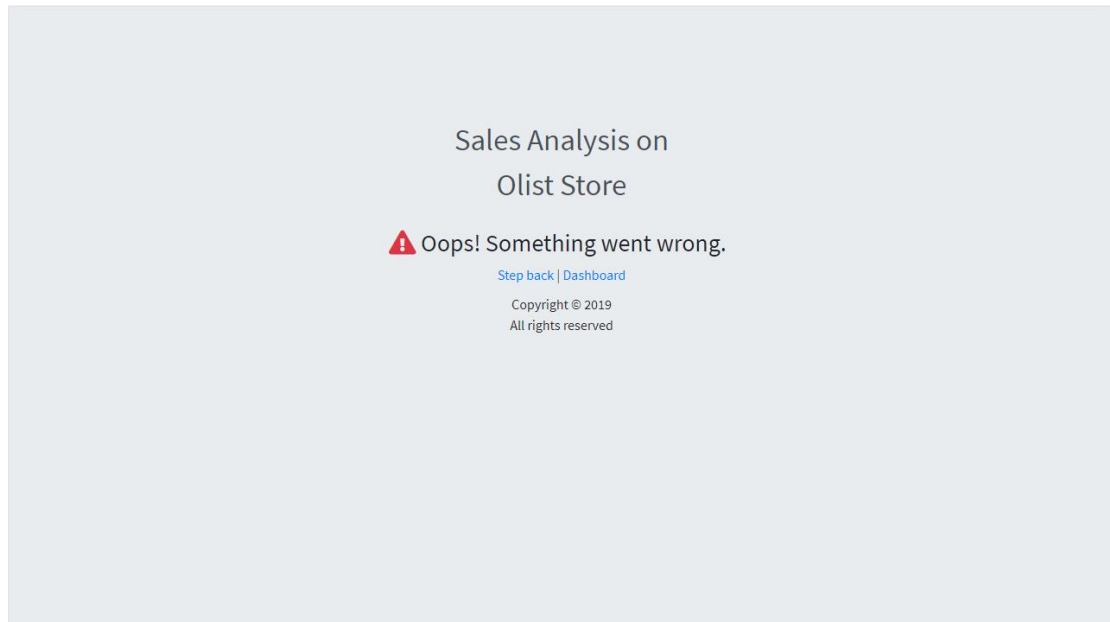
- Press "Register" → Register a new account and jump to 1.1.
- Press "I already have a membership" → Jump to 1.1.



The image shows a registration form for OlistAnalysis. The form is titled "Register a new membership" and is set against a light gray background. It contains several input fields: "Full name" with a person icon, "Email" with an envelope icon, "Password" with a lock icon, and "Retype password" with a lock icon. Below these fields is a checkbox labeled "I agree to the terms" and a blue "Register" button. Below the button is a separator "- OR -" and a red button with a left arrow icon labeled "I already have a membership".

## 1.3 /error

- Click "Step back" → Jump back to previous page.
- Click "Dashboard" → Jump to 1.



## 1 /

- Click "Sign Out" → Sign out and jump to 1.1.
- Click "Customer" → Jump to 2.1.
- Click "Order" → Jump to 2.2.
- Click "Product" → Jump to 2.3.
- Click "Seller" → Jump to 2.4.

- f. Click "Sales trend by product" → Jump to 3.1.
- g. Click "Sales trend by location" → Jump to 3.2.
- h. Click "Sales trend by category" → Jump to 3.3.
- i. Click "Customer trend" → Jump to 3.4
- j. Click "Delivery trend" → Jump to 3.5
- k. Click "Satisfactory trend" → Jump to 3.6
- l. All pages in 2. and 3. have same left menu, sign-out button and bottom banner.

Olist Analysis

wangguozhi

Dashboard

Simple Search 4

Customer

Order

Product

Seller

Advanced Analysis 6

Sales trend by product

Sales trend by location

Sales trend by category

Customer trend

Delivery trend

Satisfactory trend

Dashboard

Breid introduction here...

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## 2.1 /simple/customer

- a. Press "Apply" → The chosen customers will be shown below.
- b. Press "Edit" → Pop up an edit window.
- c. Press "Add" → Pop up an add window.
- d. Press "Download" → Download the table.

Olist Analysis

wangguozhi

Dashboard

Simple Search 4

Customer

Order

Product

Seller

Advanced Analysis 6

Customer

From 1 To 500 Apply Edit Add Download

Show 10 entries

#	ID	uid	ZIPCODE	CITY	STATE
1	b550b22f8a92af4e89c41f27b2330b48	037a72c77c3565c6e41ac0607c797b08	22783	rio de janeiro	RJ
2	41ce2a54c0b03b3443c3d931a367089	3a653a41f6f9fc3d2a113cf8398680e8	75265	vianopolis	GO
3	c4a111edfb69bc3c00710cc5d23575c	c90c82af514e815f4475347f1113e8e	57311	arapiraca	AL
4	8118922685d2e2c0205f060be4f2579c	d0e87d00021530383c16452a39a393ba	45810	porto seguro	BA
5	b5b0ed31f924e46f8566027d9d2d62f	b2664990a1ac9e250d98ff5c615c3276	27251	volta redonda	RJ
6	ba6945ad2c65cc4403e9df8f292d5d36	0e58d0234025ec72a2239e55e223959	01536	sao paulo	SP
7	079da973ecd0fb654da4ffdb946c9ea1	527cf8b8e85cdf78f1645e0a71e266f	01455	sao paulo	SP
8	7eab558047c3de47137ad379d5daa36b	2cc0f5aff2ccbdacbc6c5e88f5f059	81540	curitiba	PR
9	73b78086f774603121ae9c25de7056c	89e3027de49c3012858feb7f5a34f59	24724	sao goncalo	RJ
10	05425c9e35d762211742df2a2b30a0	87a7c309f06d9da963125a0d7f8193a	06114	osasco	SP

Showing 1 to 10 of 499 entries

Previous 1 2 3 4 5 ... 50 Next

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2.2 /simple/order & 2.3 /simple/product & 2.4 /simple/seller

- a. The content on the right has similar functions as the one in 2.1.

3.1 /advanced/sales\_trend\_by\_product

- a. Click "Trend It" → A sales-time line chart of chosen product during the chosen time period will be given below.

Handwritten interface for "Sales trend by time":

Sales trend by location

Sales trend by time

select beginning time

select ending time

select product

trend it

line chart



3.2 /advanced/sales\_trend\_by\_location

- a. Click "Trend It" → A thermal map of the chosen location will be given.  
b. Slide timeline → The thermal map will be changed according the time.

Handwritten interface for "Sales trend by location":

Sales trend by category

Sales trend by location

select state

select city

trend it

heat map with time sliders



3.3 /advanced/sales\_trend\_by\_category

- a. Click "Trend It" → A sales-time stacked map by category will be shown. Different categories are drawn by different colors.

Handwritten interface for "Sales trend by category":

active user trend

Sales trend by category

select year 1

select year 2

select category

trend it

stacked map



### 3.4 /advanced/custermor\_trend

a. Click "Trend It" → A customer-time histogram will be given. Here only active customers will be counted (the ones who actually placed orders are active customers).

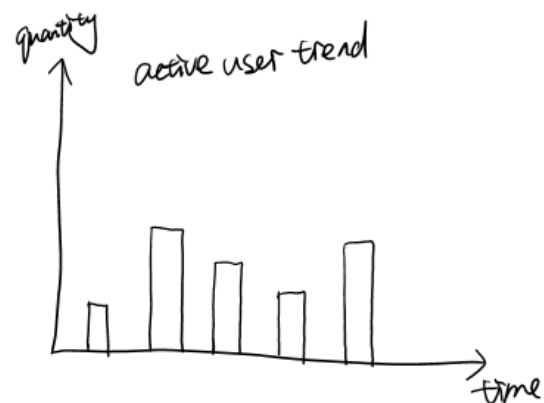
active user trend

select beginning time  select ending time

select state

trend it

bar chart



### 3.5 /advanced/delivery\_trend

a. Click "Trend It" → A delivery cost-time histogram of the chosen places will be given.

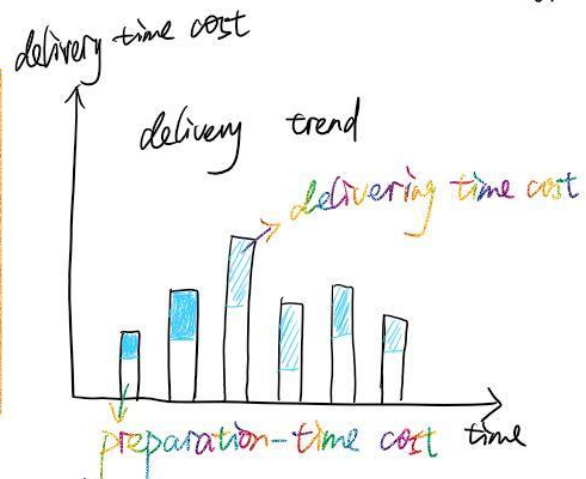
Delivery trend

select state1  select city1

select state2  select city2

trend it

bar chart & line chart



### 3.6 /advanced/satisfactory\_trend

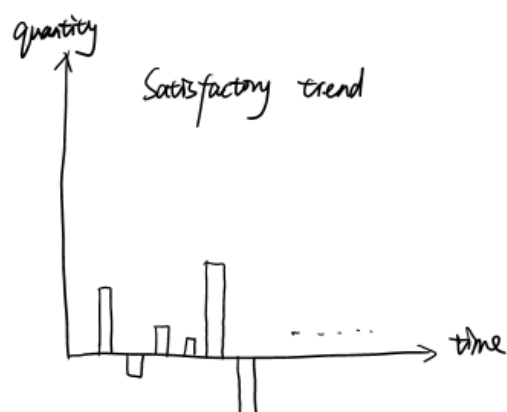
a. Click "Trend It" → A satisfactory trend histogram of the chosen product will be given.

Satisfactory trend

select category  select product

trend it

bar chart



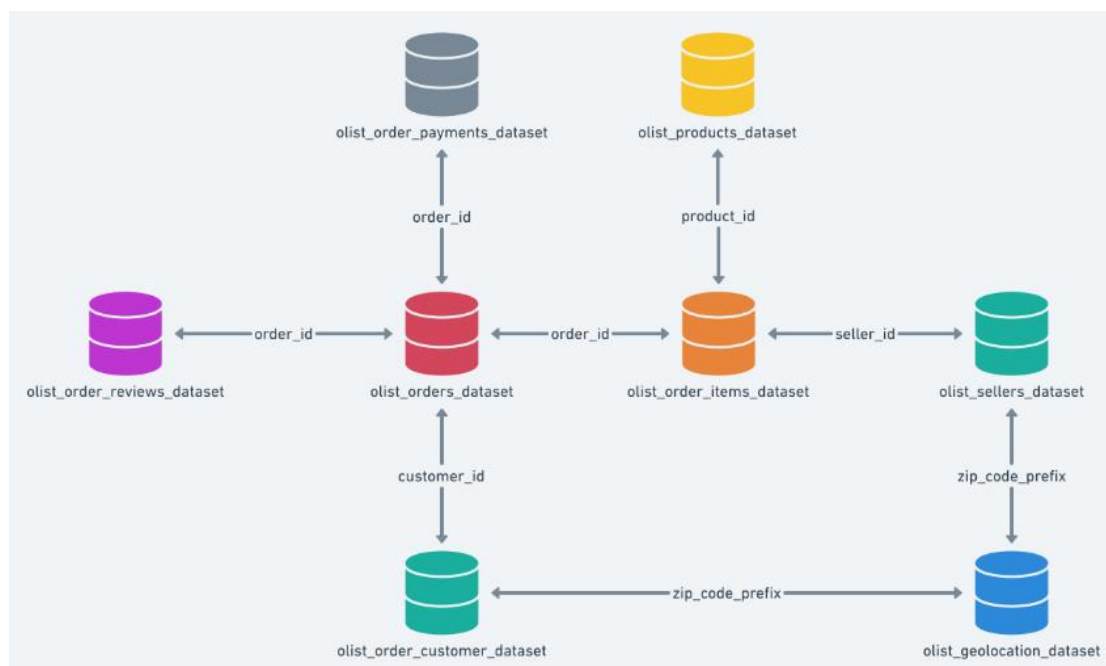
# Conceptual Database Design

## Original Data

Url: <https://www.kaggle.com/olistbr/brazilian-ecommerce/> CC BY-NC-SA 4.0

The data source is a public dataset provided by Olist Store on Kaggle. All data are real data. All data are anonymized. Names of customers, sellers and products are not given. References to the companies or partners in the review text have been replaced with the names of Game of Thrones great houses.

The original data is provided by 8 csv files. The structure is given below.

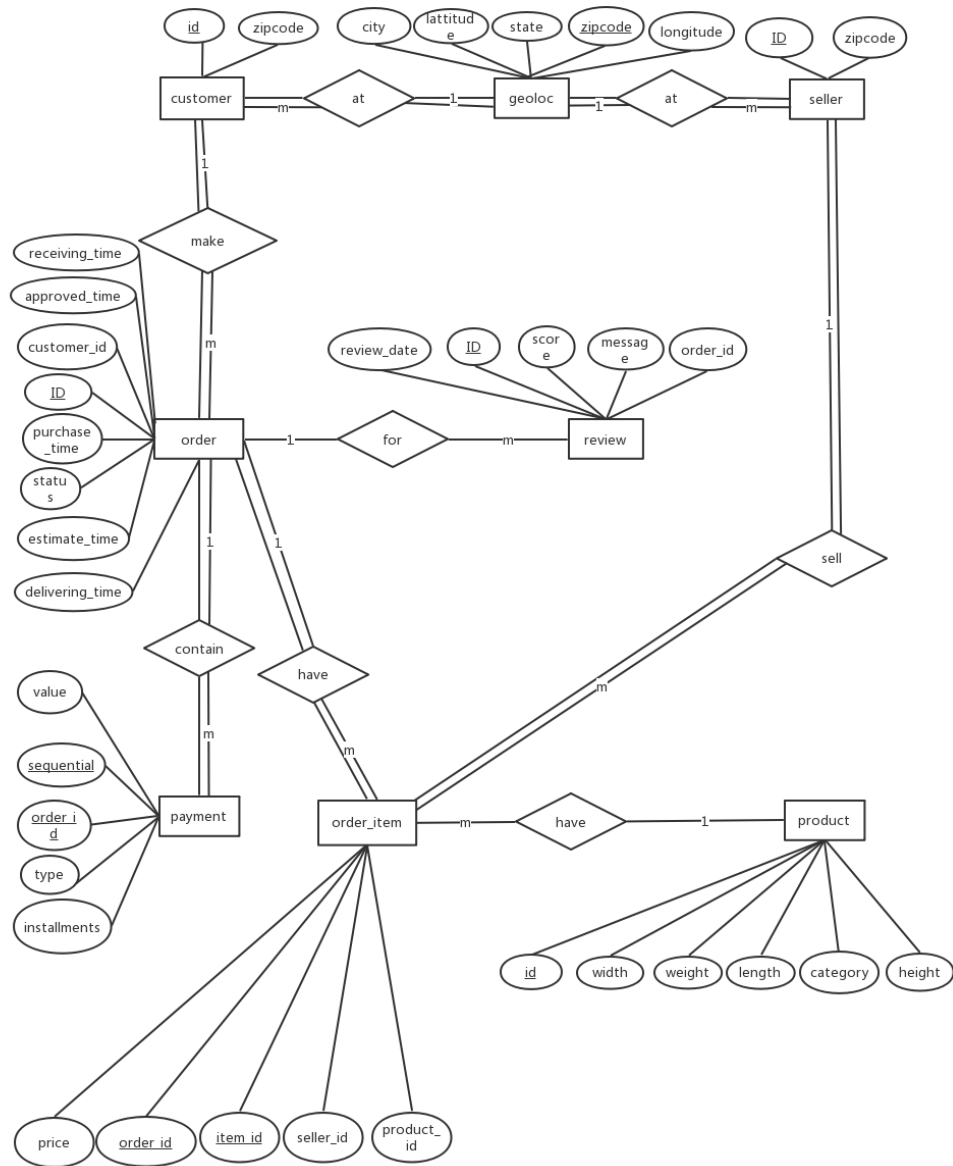


Brief Structure provided by Kaggle

Some useless data have been dropped. For example, the description length in the product dataset will not be used in our project, so they are dropped.



## Entity-Relationship Diagram



## Database Details

### Customer:

ID	VARCHAR2(32)	32 letters long unique id, primary key
zipcode	VARCHAR2(5)	zip code

### Geoloc:

zipcode	VARCHAR2(5)	zipcode, primary key
latitude	NUMBER	
longitude	NUMBER	
city	VARCHAR2(128)	
state	VARCHAR2(32)	

### Order:

ID	VARCHAR2(32)	32 letters long unique id, primary key
customer_id	VARCHAR2(32)	32 letters long unique id for customer
status	VARCHAR2(16)	delivered? canceled?
purchase_time	DATE	when customer placed the order
approved_time	DATE	when customer payed the order
delivering_time	DATE	when delivery started
receiving_time	DATE	when customer received the package
estimate_time	DATE	an estimate time of receiving made by Olist Store

### Order\_item:

order_id	VARCHAR2(32)	32 letters long unique id, primary key
item_id	NUMBER	sequence number of the order, primary key
product_id	VARCHAR2(32)	32 letters long unique id for product
seller_id	VARCHAR2(32)	32 letters long unique id for seller
price	NUMBER	
freight_value	NUMBER	

### Payment:

order_id	VARCHAR2(32)	32 letters long unique id, primary key
sequential	NUMBER	sequence number of the payment, primary key
type	VARCHAR2(32)	credit card? coupon?
installments	NUMBER	
value	NUMBER	

### Product:

ID	VARCHAR2(32)	32 letters long unique id, primary key
category	VARCHAR2(64)	
width	NUMBER	
length	NUMBER	
height	NUMBER	

weight	NUMBER
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Review:

ID	VARCHAR2(32)	32 letters long unique id, primary key
order_id	VARCHAR2(32)	32 letters long unique id, for order
score	NUMBER	from 1 – 5, higher is better
message	VARCHAR2(1024)	
review_date	DATE	when customer made review

Seller:

ID	VARCHAR2(32)	32 letters long unique id, primary key
zipcode	VARCHAR2(5)	