

MERCARI DATABASE

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1. **專案介紹**

Kaggle資料科學競賽平台介紹

- × 數據建模和數據分析競賽平台。
- × 企業和研究者可在其上發布數據，統計學者和數據挖掘專家可在其上進行競賽以產生最好的模型。

The Kaggle logo, consisting of the word "kaggle" in a lowercase, blue, sans-serif font.

Kaggle資料科學比賽介紹

Mercari Price Suggestion Challenge

- × 日本著名**C2C**(私對私)二手交易平台。
- × 商品的介紹及價格均由賣家自行輸入。
- × **比賽要求**：參賽者需為**Mercari**構建一種自動建議正確的產品價格的算法，自動向在線賣家推薦產品價格。



mercari

專案動機與內容介紹

動機

在現實生活中，資料會持續的增加，如果沒有良好且井然有序的資料倉儲，在資料處理上勢必會是一個大麻煩。

內容

我們希望以專案小組的身分，為**Mercari**這個公司建立一個符合公司需求的資料庫系統跟模型，提供未來更進一步的分析與應用。



2. **研究方法**

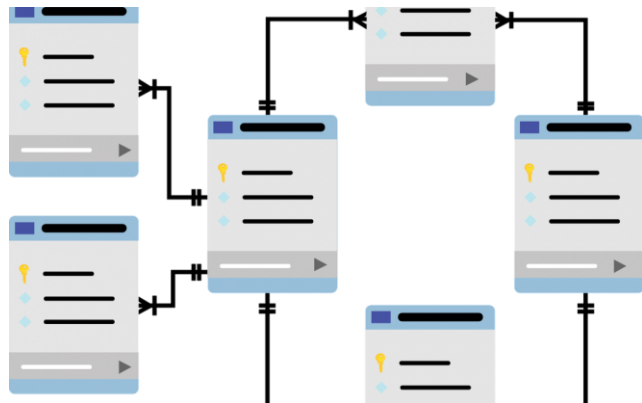
RELATIONAL DATABASE

關聯式資料庫



關聯式資料庫

- × 由兩個或兩個以上的資料表組成
- × 資料表之間通過相同欄位值連接
- × 組成元素：資料庫、資料表、欄位、欄位值、關聯
- × 作法：將各種資料依照性質的不同，分別存放在幾個不同的表格中，表格與表格之間的關係則以共同的欄位值相互連結



R Markdown文件

- × An R Markdown (.Rmd) file is **a record of your research**
- × It contains the **code** that a scientist needs to reproduce your work along with the **narration** that a reader needs to understand your work



3.

研究資料

Kaggle 官網比賽資料集 **train.tsv** ➔ **Product**

train_id or test_id	ID	
name	名稱	可能包括刪除的單詞，標記為[rm]
item_condition_id	商品狀況	賣方提供的物品的條件/狀況
category_name	類別	由 / 分隔
brand_name	品牌	
price	售價(美元)	預測的目標變量，test.tsv 中不存在
shipping	運費	1：由賣方支付, 0：由買方支付
item_description	項目描述	可能包括刪除的單詞，標記為[rm]

專案整理資料表

Member

m_id	會員ID
name	會員姓名
gender	會員性別
email	會員信箱
password	會員密碼
credit_cd	會員信用卡號
country	會員所在國家

Transaction

trans_id	訂單編號
trans_date	交易日期
train_id	商品ID
trans_item	商品名稱
price	商品價格
payment_method	付款方式
shipping_method	運送方式
s_id	賣家編號
b_id	買家編號

Member

	m_id	name	gender	email	password	credit_cd	country
1	M0001	Barry Trent	M	Barry_Trent1438@acrit.org	002-634-702	2601-5524-4588-7647	Russia
2	M0002	Ilona Hill	F	Ilona_Hill4773@typill.biz	731-057-312	4831-6306-0615-1312	Samoa
3	M0003	Liam Stevenson	M	Liam_Stevenson6924@grannar.com	782-734-651	4648-3300-1828-3158	Norway
4	M0004	Harvey Bishop	M	Harvey_Bishop8583@svelto.biz	635-244-523	0014-8283-7701-3546	Uruguay
5	M0005	Nathan Reid	M	Nathan_Reid6906@vetan.org	556-560-444	6883-0106-8306-6837	Iceland
6	M0006	Emmanuelle Shields	F	Emmanuelle_Shields6077@womeona.net	334-816-132	2443-5154-7564-5876	Ecuador
7	M0007	Martin Flanders	M	Martin_Flanders8300@twipet.com	135-841-707	0731-3818-8375-8064	Portugal
8	M0008	Manuel Preston	M	Manuel_Preston8559@muall.tech	423-001-028	5747-4523-5542-8513	Taiwan
9	M0009	Manuel Kelly	M	Manuel_Kelly1232@ubusive.com	118-808-178	1700-4800-0427-2345	Cabo Verde
10	M0010	Dorothy Maxwell	F	Dorothy_Maxwell3479@extex.org	442-546-134	7500-5077-4784-7476	Papua New Guinea

Transaction

	trans_id	trans_date	train_id	trans_item	price	payment_method_id	shopping_method_id
1	c47ad4f0-4750-4535-9e68-8f0848c7b395	5/18/2019	17684	Rae Dunn Collection (WillyChez)	73	9	2
2	7e95b651-3805-4afb-bb14-136a9ed448bb	1/13/2019	31465	10k gold diamond ring	89	1	7
3	3ad22300-7805-40d7-a19f-8226e3785ecb	5/23/2019	95810	Lot of 4 nursing tops	26	8	6
4	813fc10e-fca3-4f9d-b301-20c43c9641ef	5/11/2019	47781	Nike Skateboarding Hat	13	8	3
5	a98c5293-5bc8-4942-a802-39b631bf1fca	2/13/2019	9726	New Colombia Adidas Soccer Jersey #10	24	6	5
6	eb9f16c0-ca0d-4c27-8f0c-0deda3525f92	3/5/2019	2480	iPhone 6/6s/7 tempered glass	7	6	2
7	b9ac9e11-a1c4-4ed4-84f0-2d8645987869	5/20/2019	74446	6 inch cake topper	14	7	6
8	cabda801-c1eb-4db0-a020-5fed0b20a559	4/9/2019	19303	Ivory Tulle Skirt With Ribbon	40	4	5
9	b7ba2611-b168-425b-96a5-92f98d7e47d6	3/17/2019	91580	LOREAL AND MAYBELLINE MASCARA .	10	9	2
10	07f355fe-96ed-4187-af62-ed2182e16136	6/13/2019	96376	NEW Sam Edelman SZ8 Platform Suede Boots	75	1	5

專案整理資料表

Searching Keyword

m_id	會員ID
date	日期
description	搜尋關鍵字

Notification

n_id	訊息ID
m_id	會員ID
date	日期
description	訊息內容

	▲ m_id ▼	date ▼	description ▼
1	M1652	4/7/4017	coat
2	M0998	7/9/8847	pencil box
3	M0999	11/3/6713	pants
4	M1000	7/21/7468	LV
5	M0968	12/9/0430	belt
6	M0969	2/22/5196	glasses
7	M0970	4/10/0330	buzz light year
8	M0971	9/21/2145	laptop
9	M0972	10/2/0990	nootbook
10	M1009	10/12/4444	coffee machine

Searching Keyword

Notification

	▲ n_id ▼	m_id ▼	Date ▼	description ▼
1	N0001	M0001	6/8/2019	Get Rihanna's Look
2	N0002	M0002	1/21/2019	buy one get one free
3	N0003	M0003	3/13/2019	Happy Birthday to You
4	N0004	M0004	4/29/2019	Check out our specialties
5	N0005	M0005	2/7/2019	hot fashion
6	N0006	M0006	5/14/2019	Hi there how's it going today
7	N0007	M0007	2/7/2019	Come to our place
8	N0008	M0008	3/5/2019	Happy Birthday to You 5% off coupon
9	N0009	M0009	3/1/2019	You are the special one
10	N0010	M0010	2/17/2019	Do you wanna be different

專案整理資料表

Seller

s_id	賣家ID
name	賣家姓名
train_id	商品編號
item_name	商品名稱
item_price	商品價格

Buyer

b_id	買家ID
name	買家姓名
coup_id	折價券編號
trans_id	訂單編號
train_id	商品編號

Seller

	s_id	name	train_id	item_name	item_price
1	M0001	Barry Trent	54890	Lacoste+ D2:E941 Polo size 8	15
2	M0002	Ilona Hill	1212123	Milk Drops for (2 on hold)	14
3	M0003	Liam Stevenson	205854	New (1) True Red enduring lip liner (LL)	10
4	M0004	Harvey Bishop	690047	Vans Shoes Mens 9 or W 10.5	21
5	M0005	Nathan Reid	1389629	Beauty Blenders	7
6	M0006	Emmanuelle Shields	579357	PINK blue water bottle	13
7	M0007	Martin Flanders	1476577	NEW: VS Pink Towel	28
8	M0008	Manuel Preston	866708	free ship {guess} sexy ruched dress	12
9	M0009	Manuel Kelly	884932	Liz Lange Maternity Dress	10
10	M0010	Dorothy Maxwell	1381977	Xbox S Controller (D Diggler)	10

	b_id	name	coup_id	trans_id	train_id
1	M1001	Tess Rodwell	5	c47ad4f0-4750-4535-9e68-8f0848c7b395	54890
2	M1002	Lara Jarvis	7	7e95b651-3805-4afb-bb14-136a9ed448bb	1212123
3	M1003	Jolene Doherty	2	3ad22300-7805-40d7-a19f-8226e3785ecb	205854
4	M1004	Carmen Franks	10	813fc10e-fca3-4f9d-b301-20c43c9641ef	690047
5	M1005	Gabriel Plant	4	a98c5293-5bc8-4942-a802-39b631bf1fca	1389629
6	M1006	Harriet Ramsey	10	eb9f16c0-ca0d-4c27-8f0c-0deda3525f92	579357
7	M1007	Charlotte Clark	3	b9ac9e11-a1c4-4ed4-84f0-2d8645987869	1476577
8	M1008	Rosie Moore	1	cabda801-c1eb-4db0-a020-5fed0b20a559	866708
9	M1009	Kurt Harris	7	b7ba2611-b168-425b-96a5-92f98d7e47d6	884932
10	M1010	Josh Tanner	5	07f355fe-96ed-4187-af62-ed2182e16136	1381977

Buyer

專案整理資料表

Shipping Method

shipping_method_id	運送方式ID
name	運送方式
description	描述

Payment Method

shipping_method_id	付款方式ID
name	付款方式
description	描述

	ID	name	description
1	1	PayPal	Multinational online shopping
2	2	MasterCard	leading the global payment industry
3	3	VISA	safe and convenient payment options
4	4	AMERICAN EXPRESS	offer payment offers
5	5	DISCOVER	safe

Shipping Method

Payment Method

	ID	name	description
1	1	PayPal	Multinational online shopping
2	2	MasterCard	leading the global payment industry
3	3	VISA	safe and convenient payment options
4	4	AMERICAN EXPRESS	offer payment offers
5	5	DISCOVER	safe

專案整理資料表

Product Picture

p_id	照片ID
train_id	商品編號
Image_source	圖片檔名

Review

review_id	評論
train_id	商品編號
description	描述
rate	評分

Review

Product Picture

	ID	train_id	image_source
1	PP0001	1	ec1bce50-bd98-459e-856d-d2004c9e5007.jpg
2	PP0002	2	d09f4157-797e-4a48-90a8-70e4846ad84f.jpg
3	PP0003	3	14179577-9531-44b6-9964-7c9a63c90fc8.jpg
4	PP0004	4	92fdd144-4084-4f70-b85c-29ae1e8bf47c.jpg
5	PP0005	5	cec26dc3-077b-4599-ab6e-33f428ab34a4.jpg
6	PP0006	6	e6ca66a5-a4b1-42e4-8e97-cbb3b92be03b.jpg
7	PP0007	7	ac94e829-d6b0-4c36-bb47-46d9122427e6.jpg
8	PP0008	8	14725629-ebdd-4bd5-93bb-661d636852fb.jpg
9	PP0009	9	6c54985e-e5aa-4fd3-8dad-04e7bdd3a132.jpg
10	PP0010	10	18207d3a-9ced-40d2-92a9-3163d993294b.jpg

	review_id	train_id	description	rate
1	R0897	787	Absolutely wonderful - silky and sexy and comfortable	2
2	R0446	285	Love this dress! it's sooo pretty. i happened to find it in a ...	2
3	R0015	265	I had such high hopes for this dress and really wanted it t...	2
4	R0358	7	I love, love, love this jumpsuit. it's fun, flirty, and fabulous...	1
5	R0868	904	This shirt is very flattering to all due to the adjustable fro...	4
6	R0056	120	I love tracy reese dresses, but this one is not for the very ...	3
7	R0458	392	I aded this in my basket at hte last mintue to see what it ...	5
8	R0393	584	I ordered this in carbon for store pick up, and had a ton ...	4
9	R0468	296	I love this dress. i usually get an xs but it runs a little snu...	2
10	R0278	214	I'm 5'5" and 125 lbs. i ordered the s petite to make sur...	1

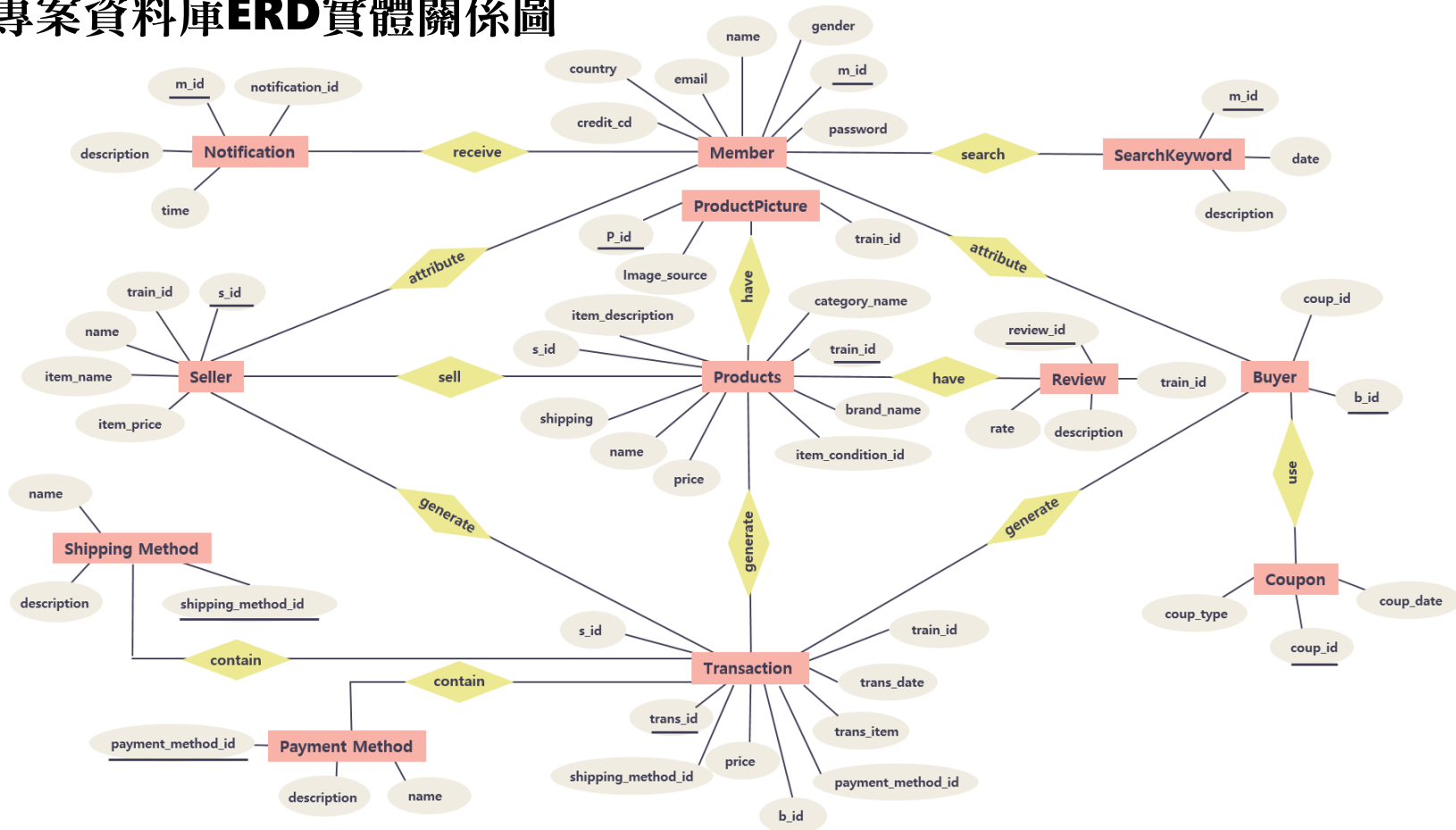
專案整理資料表

Coupon

s_id	賣家ID
name	賣家姓名
train_id	商品編號
item_name	商品名稱
item_price	商品價格

	coup_id	coup_name	coup_date
1	1	10%off	6/25/2019
2	2	15%off	6/27/2019
3	3	20%off	7/23/2019
4	4	25%off	7/18/2019
5	5	30%off	7/25/2019
6	6	35%off	8/7/2019
7	7	40%off	8/19/2019
8	8	buy one get one free	9/1/2019
9	9	50%off	9/15/2019
10	10	\$10 cash coupon	10/10/2019

專案資料庫ERD實體關係圖



4.

資訊管理應用系統

資訊管理模組 (一) 產品特定價格區間查詢模組

產品特定價格區間查詢模組是為了讓顧客可以自己選取商品，然後設定自己的理想預算

```
item_name = readline(prompt = 'you want item:')
```

```
price_min = readline(prompt = 'your budget minimum:')
```

```
price_max = readline(prompt = 'your budget maximum:')
```

```
price_sql = paste0("SELECT train_id,name,item_condition_id,price,shipping,item_description from product  
                    where price > ",price_min," and price < ",price_max," and name like '%",item_name,"%'")
```

```
price_data = dbGetQuery(connect ,price_sql)
```


資訊管理模組 (一) 產品特定價格區間查詢模組

產品特定價格區間查詢模組是為了讓顧客可以自己選取商品，然後設定自己的理想預算

	name	item_condition_id	price	shipping	item_description
1	MLB Cincinnati Reds T Shirt Size XL	3	10	1	No description yet
2	AVA-VIV Blouse	1	10	1	Adorable top with a hint of lace and a key hole in the bac...
3	Girls cheer and tumbling bundle of 7	3	6	1	You get three pairs of Sophie cheer shorts size small and ...
4	Girls Nike Pro shorts	3	19	0	Girls Size small Plus green. Three shorts total.
5	Porcelain clown doll checker pants VTG	3	8	0	"I realized his pants are on backwards after the picture. Th...
6	Smashbox primer	2	8	1	0.25 oz Full size is 1oz for [rm] in Sephora
7	Sephora tarte birthday gift	1	11	1	Brand new. Deluxe travel size products. Contains: Amazoni...
8	Glitter Eyeshadow	1	6	1	2 glitter eyeshadows; one in Brass and one in Bleached.
9	Triple car charger	1	8	1	Brand new never used All colors are available Each Only [r...
10	Black and Red Baseball Tee	2	10	0	lanascloset ~~~ description: never worn! ? i delete/updat...
11	Kendra bundle	3	16	1	29w. X 33l. Social stretch hollister jeans *** please see pict...
12	Caudal Beauty Elixir Spray	1	10	1	New unused and authentic. Caudalie beauty elixir mist. 1 oz
13	Under Armour maroon and gray shirt metal	4	6	1	Has some wear to the back
14	Victoria secret 34 c corest top	3	10	0	Victoria secret 34 c corest top Will bundle to save on ship...
15	tropical flower print bra from pink	3	13	1	"Used buh looks brand new and is washed and ready to b...
16	lots of Korean Nature Republic face mask	1	14	1	totally 36 masks

資訊管理模組 (二) 免運費產品類別查詢模組

希望可以找出免運費商品然後看各類別的數量

```
item_name = readline(prompt = 'you want item:')
```

```
#sql2 = 'SELECT category_name from tableall where shipping = 1'
```

```
shipping_sql = paste0("SELECT train_id,category_name from product  
                        where shipping = 1 and name like '%" ,item_name,"%'")
```

```
shipping_temp = dbGetQuery(connect ,shipping_sql)
```

```
shipping_model = strsplit(as.character(shipping_temp$category_name),'/')
```

```
for(all_data_list in 1:length(shipping_model)){
```

```
  #print(all_data_list)
```

```
  for (i in shipping_model[all_data_list]){
```

```
    shipping_list = append(shipping_list,i)
```

```
  }
```

```
}
```

```
shipping_vector = unlist(shipping_list, use.names=FALSE)
```

```
shipping_data = summary(as.factor(shipping_vector))
```

```
shipping_data = as.data.frame(shipping_data)
```

資訊管理模組(二) 免運費產品類別查詢模組

希望可以找出免運費商品然後看各類別的數量

	shipping_data
Women	13936
Beauty	8120
Makeup	5379
Kids	4475
Other	3595
Electronics	3153
Jewelry	2710
Shoes	2277
Tops & Blouses	2145
Face	1933
Men	1927
Toys	1678
Vintage & Collectibles	1618
Athletic Apparel	1593
Lips	1425
Eves	1251

資訊管理模組 (三) 特定預算最新商品推薦模組

特定預算最新商品推薦模組，先讓顧客填入想要的預算價格，在這個價格下特地選出最新商品

```
budget = readline(prompt = 'your budget:')
```

```
new_item_sql = paste0("SELECT train_id,name,price,shipping,item_description from product
```

```
    where price < ",budget," and item_condition_id = 1")
```

```
new_item_data = dbGetQuery(connect ,new_item_sql)
```

資訊管理模組(三) 特定預算最新商品推薦模組

特定預算最新商品推薦模組，先讓顧客填入想要的預算價格，在這個價格下特地選出最新商品

	name	price	shipping	item_description
1	AVA-VIV Blouse	10	1	Adorable top with a hint of lace and a key hole in the bac...
2	Leather Horse Statues	35	1	New with tags. Leather horses. Retail for [rm] each. Stand ...
3	24K GOLD plated rose	44	0	Complete with certificate of authenticity
4	New vs pi k body mists	34	0	(5) new vs pink body mists (2.5 oz each) Fresh & Clean Su...
5	Sharpener and eraser	4	1	No description yet
6	Sephora tarte birthday gift	11	1	Brand new, Deluxe travel size products. Contains: Amazoni...
7	Glitter Eyeshadow	6	1	2 glitter eyeshadows; one in Brass and one in Bleached.
8	New: Baby K'tan active baby carrier	29	1	Brand new in box Size: Medium Color: Coral Retails for [r...
9	"Too Faced Limited ""Merry Macaroons""	25	1	"This AUTHENTIC pallette by Too Faced is brand new in mi...
10	NWT VS ULTIMATE SPORTS BRA 34ddd	20	0	NWT Victoria's Secret ULTIMATE SPORT BRA -MAXIMUM S...
11	Triple car charger	8	1	Brand new never used All colors are available Each Only [r...
12	Otterbox Defender iPhone 6 Plus/6s Plus	0	13	1
13	Too Faced Better Than Sex Mascara QTY3	32	1	BNIB 3 for [rm] Better Than Sex Waterproof Mascara Trave...
14	Pink bra 36d	22	0	Pink bra with logo band! 36d push up
15	Caudal Beauty Elixir Spray	10	1	New unused and authentic. Caudalie beauty elixir mist. 1 oz
16	Black Capri Leggings w/ Flowers One size	0	0	13.0

資訊管理模組 (四) 推薦買家關聯商品

推薦買家關聯商品根據買家填入的想要物品，去找出名稱中包含這些字的商品資訊，並傳回給顧客

```
sql4 = 'SELECT name,category_name,item_description from product'

item_name = readline(prompt="You want item: ")

name_sql = paste0("SELECT train_id,name,category_name,item_description from tableall

                  where name like '%" ,item_name,"%'", " and item_description like '%" ,item_name,"%'")

name_data = dbGetQuery(connect ,name_sql)
```

資訊管理模組 (四) 推薦買家關聯商品

推薦買家關聯商品根據買家填入的想要物品，去找出名稱中包含這些字的商品資訊，並傳回給顧客

	name	category_name	item_description
1	MLB Cincinnati Reds T Shirt Size XL	Men/Tops/T-shirts	No description yet
2	Women's Espresso Pink Coral shirt XL	Women/Tops & Blouses/T-Shirts	Extra large shirt with purple beaded flower design. Size e...
3	XL dress with built in bra.	Women/Dresses/Other	White XL dress with built in bra. Strapless
4	New Xlg woman's sexy summer halter top	Women/Tops & Blouses/Halter	New with tags
5	2-Mens XXL Cruise Ship T-Shirts NWOT	Men/Tops/T-shirts	2-Mens XXL Cruise Ship T-Shirts. Grey-Royal Caribbean on...
6	NWT Lularoe 3XL Randy	Women/Tops & Blouses/Tunic	Smoke free and dog friendly home. New and unworn Randy
7	HP 952 XL HP 952 COLOR	Other/Office supplies/Ink & Toner	Combo pack new Black xl Cyan Magenta Yellow expiratio...
8	LuLaRoe NWT Amelia 3XL	Women/Maternity/Dresses	Watermelon colors
9	Nintendo 64 Men's T shirt Size 2XL	Men/Tops/T-shirts	New t shirt Official Licensed Product Size 2XL
10	Off shoulder top xl	Women/Tops & Blouses/Blouse	New never worn. So pretty fl in a boutique. I bought for 4...
11	2 brand new dolman style tops xl/2xl	Women/Tops & Blouses/Blouse	Brand new dolman tops super soft. One is black the other ...
12	MLB Cincinnati Reds T Shirt Size XL	Men/Tops/T-shirts	No description yet
13	MLB Cincinnati Reds T Shirt Size XL	Men/Tops/T-shirts	No description yet
14	MLB Cincinnati Reds T Shirt Size XL	Men/Tops/T-shirts	No description yet
15	Women's Espresso Pink Coral shirt XL	Women/Tops & Blouses/T-Shirts	Extra large shirt with purple beaded flower design. Size e...
16	XL dress with built in bra.	Women/Dresses/Other	White XL dress with built in bra. Strapless

資訊管理模組 (五) 五大品牌查詢模組

像是鞋子或3C等，在還沒確定目標前，可能會想先知道有哪些比較大的品牌，此模組可以選擇想買的商品類別，然後列出五大品牌

```
category = readline(prompt = 'you want category:')
```

```
brand_sql = paste0("SELECT train_id,brand_name,count(brand_name) as cb from product
```

```
where brand_name is not null and category_name like '%",category,"%' GROUP by brand_name ORDER BY cb DESC")
```

```
brand_data = dbGetQuery(connect ,brand_sql)
```

```
brand_data = brand_data[-1,]
```

```
brand_data = brand_data[1:5,]
```

```
rownames(brand_data) = 1:nrow(brand_data)
```

資訊管理模組(五) 五大品牌查詢模組

像是鞋子或3C等，在還沒確定目標前，可能會想先知道有哪些比較大的品牌，此模組可以選擇想買的商品類別，然後列出五大品牌

	brand_name	cb
1	Tights	3810
2	PINK	2887
3	Victoria's Secret	2648
4	Nike	2225
5	Mini	1298

資訊管理模組(六) 特定賣家商品查詢模組

因為優惠門檻通常只能同賣家的累計，所以可以選擇特定賣家，再搜尋此賣家的所有商品

```
select DISTINCT(p.train_id),p.name,p.item_condition_id,r.rate,r.description,p.price from product
as p left join(SELECT train_id,description,rate from review where rate = 1)
as r on p.train_id = r.train_id where name like '%Air Jordan%'
```

資訊管理模組(六) 特定賣家商品查詢模組

因為優惠門檻通常只能同賣家的累計，所以可以選擇特定賣家，再搜尋此賣家的所有商品

+ 選項						
train_id	name	item_condition_id	rate	description	price	
2399	Air Jordan Dub Zero	3	1	After reading the previous reviews, i ordered a si...	39	
4123	"Air Jordan 13 ""Chicago""	2	1	Nice vest, pretty olive color, hangs nice but...it...	125	
6910	100% Authentic Air Jordan T-Shirt	2	1	NICEEEEE!!!	10	
6971	Air Jordan Lanyard FREE SHIPPING	1	1	Love this vest! the color looks a little more brow...	6	
9363	Air Jordan 1 Mid - 11.5	1	1	It's a pretty top, but it runs very short. the bac...	70	
10135	Nike Air Jordan XXX	3	1	I'm not usually big on lace but this is so unique...	26	
10372	BRAND NEW NIKE AIR JORDAN HAT	1	1	Some reviewers found this skirt to be on the small...	26	
15115	Air Jordan 5s	3	1	This is a lovely pencil shoe that is well-made and...	76	
15237	Air Jordan Retro Low GG	3	1	So disappointed that no where in the limiting did...	96	
15556	Air Jordan 13 toddler	3	1	Love everything about this beautiful coat except t...	39	
17318	"air jordan 9 retro - ""2010 release""	3	1	This will be perfect for the mild fall weather in ...	86	
22250	NWOT Baby Air Jordan 7	2	1	The colors are vivid and perfectly autumnal but th...	25	
22861	Air Jordan Retro 6 Youth size 6	3	1	Loved the green color, the cut is super flattering...	20	
24304	"Air Jordan 11 Retro Low ""UNC""	1	1	I like this sweater so much i just bought it in a ...	166	
24996	Air jordan Low Top 6	2	1	Online, this looks like a great sweater. i ordered...	46	
25727	S/2 Air Jordan Earrings	2	1	This skirt is a great length and nice piece for fa...	10	
31956	Air Jordan's 9 Cool Grey	3	1	Unlike the other reviewers, i did not have any pro...	76	
32929	Air Jordan Maroon 6s	2	1	For a now feel, that comfy and well made, this was...	196	
36788	Air Jordan 12 toddler 7c	3	1	Bought this item on sale and was very disappointed...	44	
39007	"AIR JORDAN 5 RETRO ""BRIGHT CITRUS"" SZ 7Y"	3	1	Love the fabric of this shirt even though it was t...	66	
39734	Air Jordan	3	1	I was so excited about the arrival of my maza dres...	9	
40642	Air Jordan XVI 3/4 HI "Bred" OG 2001	3	1	Ranna designs richly detailed dresses and this is ...	156	
51792	Air Jordan retro 3 true blue toddler	3	1	I needed a dress that was easy to throw on for sum...	20	
56388	NWT men's air jordan basketball shorts S	1	1	I have a similar pair of capris from retailer and ...	19	
59116	AIR JORDAN RETRO 12s FRENCH BLUES SZ9.5	2	1	Love pilcro, love the stripes and the length - but...	153	

資訊管理模組(七) 評論特定星等篩選模型

以防折價券在想使用時才發現過期，需要時間提醒的機制，如果這個折價卷快到期了就傳email提醒買家

```
SELECT s.*,p.* FROM seller as s
left join (select * from product) as p
on s.train_id = p.train_id
where m_id = 'M0622'
```

資訊管理模組(七) 評論特定星等篩選模型

以防折價券在想使用時才發現過期，需要時間提醒的機制，如果這個折價卷快到期了就傳email提醒買家

+ 選項

m_id	name	train_id	item_name	item_price	train_id	brand_name	price	item_description
M0622	Johnathan Palmer	21992	Adidas white tubular Radial men shoes	46	21992	Adidas	46	Fair shape. Super comfy!

資訊管理模組 (八) 折價券即將到期提醒模型

產品特定價格區間查詢模組是為了讓顧客可以自己選取商品，然後設定自己的理想預算

```
SELECT b.m_id,m.gender,m.email,b.name,b.coup_id,c.date_difference FROM buyer  
as b left join (SELECT *,TIMESTAMPDIFF(DAY,CONVERT(NOW(), DATE),`coup_date`) as date_difference FROM coupon  
WHERE TIMESTAMPDIFF(DAY,CONVERT(NOW(), DATE),`coup_date`)>=5)  
as c on b.coup_id = c.coup_id left join (select m_id,name,gender,email FROM `member`) as m on m.m_id = b.m_id
```

資訊管理模組 (八) 折價券即將到期提醒模型

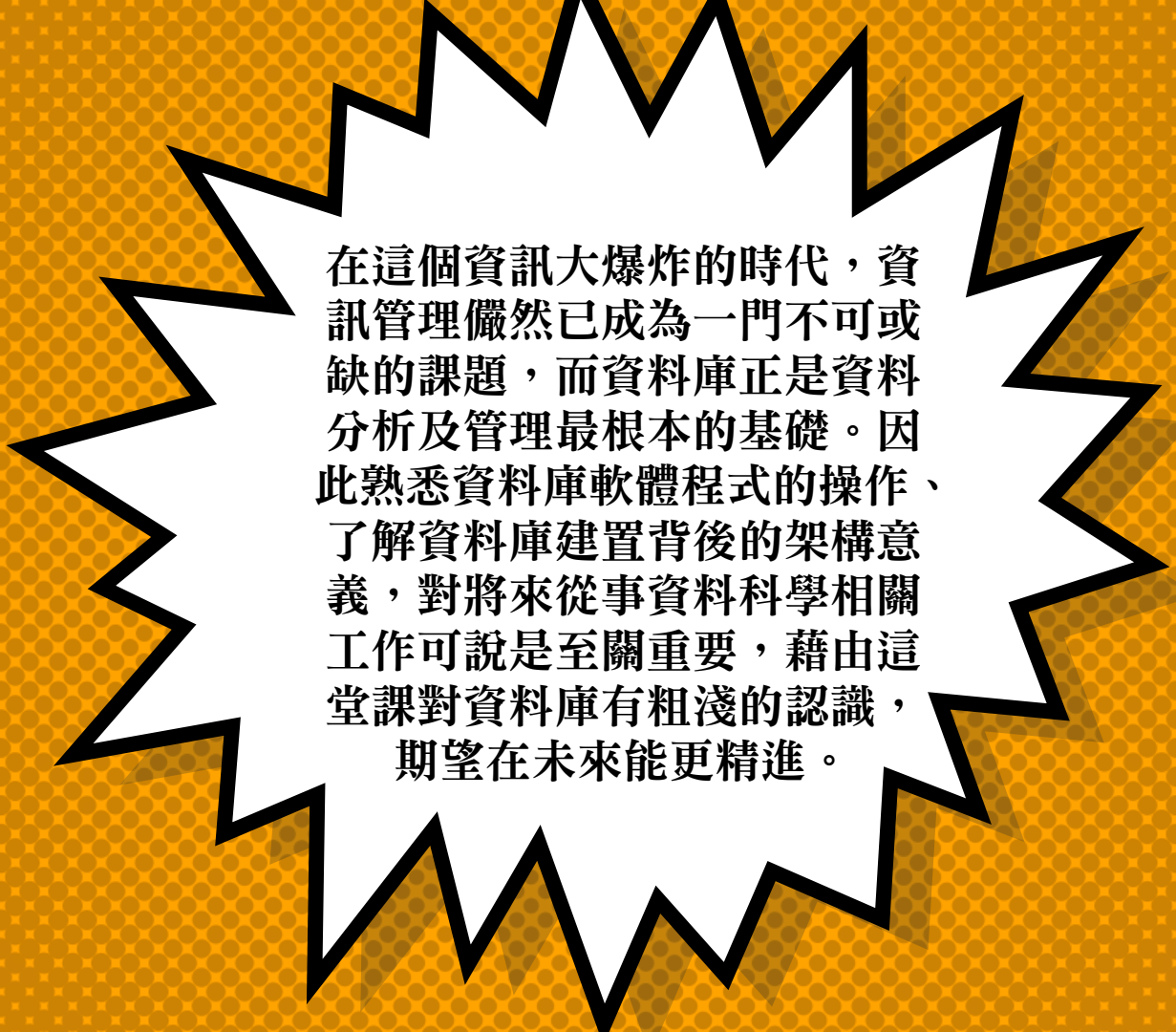
產品特定價格區間查詢模組是為了讓顧客可以自己選取商品，然後設定自己的理想預算

+ 選項					
m_id	gender	email	name	coup_id	date_difference
M1001	F	Tess_Rodwell8423@typill.biz	Tess Rodwell	5	38
M1002	F	Lara_Jarvis4645@sheye.org	Lara Jarvis	7	63
M1003	F	Jolene_Doherty3926@womeona.net	Jolene Doherty	2	10
M1004	F	Carmen_Franks3997@gembat.biz	Carmen Franks	10	115
M1005	M	Gabriel_Plant7752@breyt.org	Gabriel Plant	4	31
M1006	F	Harriet_Ramsey7947@naiker.biz	Harriet Ramsey	10	115
M1007	F	Charlotte_Clark5112@fuliss.net	Charlotte Clark	3	36
M1008	F	Rosie_Moore7476@irrepsy.com	Rosie Moore	1	8
M1009	M	Kurt_Harris6920@elnee.tech	Kurt Harris	7	63
M1010	M	Josh_Tanner2145@nanoff.biz	Josh Tanner	5	38
M1011	F	Morgan_Kerr1875@yahoo.com	Morgan Kerr	5	38
M1012	M	Joseph_Briggs2368@naiker.biz	Joseph Briggs	6	51
M1013	F	Carmen_West3227@jiman.org	Carmen West	9	90
M1014	F	Hanna_Collingwood3856@grannar.com	Hanna Collingwood	1	8
M1015	F	Britney_Hooper8323@atink.com	Britney Hooper	2	10
M1016	M	Cedrick_Burnley9690@naiker.biz	Cedrick Burnley	9	90
M1017	F	Sylvia_Nanton4485@svelto.biz	Sylvia Nanton	2	10
M1018	M	John_Sherry3859@supunk.biz	John Sherry	6	51
M1019	F	Gemma_Goldsmith1661@muall.tech	Gemma Goldsmith	7	63
M1020	F	Candace_Fields1504@fuliss.net	Candace Fields	8	76



5.

結論與未來建議



在這個資訊大爆炸的時代，資訊管理儼然已成為一門不可或缺的課題，而資料庫正是資料分析及管理最根本的基礎。因此熟悉資料庫軟體程式的操作、了解資料庫建置背後的架構意義，對將來從事資料科學相關工作可說是至關重要，藉由這堂課對資料庫有粗淺的認識，期望在未來能更精進。

工作分配

03152138 張永霖 R Markdown 撰寫，模型發想，資料建置

06123901 鄭亞南 R Markdown 撰寫，模型發想，資料建置

04131045 陳冠霖 模型發想，模型製作，ERD圖表繪製

04131021 莊家懿 模型發想，模型製作，ERD圖表繪製

04121256 賴宇安 ERD圖表繪製，模型發想，PPT製作

05121127 李庭瑩 模型發想，資料建置

04121155 林玠豪 模型發想

07133035 李柏勳

THANKS!

