Project Design Diagram

CS 157A Team 30

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E/R Diagram Description

Entity Sets

Customer

- This entity set contains the user's general information such as user's name, address, phone number and member ID. The member ID is the primary key for the entity set Customer. It shares a one to one relationship with the entity set Account.

Account

- This entity set holds the user's account information where its primary key is account ID. This entity set shares 3 relationships with the other entity sets such as a one to one relationship with entity set Customer, a one to many relationship with entity set Card Info and another one to many relationship with the entity set Orders.

Card Info

- This entity set contains the user's card payment information where the primary key is the Card ID. This entity set shares an one to many relationship with the entity set Account.

Orders

- This entity set represents the user's shopping cart where the primary key will be its order ID attribute. This entity set shares an one to many relationship with the entity set Account

Item

- This entity holds the relevant information for each item which includes the name, price, category id, and item id. The primary key for each entity is the item ID. The entity set shares a one-to-one relationship with the item stock levels entity set.

Item Stock Levels

- This entity set has a one to one relationship with the entity set items. This is because as an item can only have one stock level. The entities in the set are identified by the primary key stockID, and are paired to items by the Item's ID.

Item Categories

- This is an entity set that will hold the various categories for Items. The primary key Category ID identifies entities in this set, Category Name is also another attribute. An example of Category name can be "Chips" or "Soda".

Relationships

Owns

- This relationship has a one to one relationship between the entitiy sets Customer and Account. It is a one to one relationship because each customer can only own exactly one account and in the same hand, each account belongs to exactly one customer. Its attribute will have the keys from both entitiy sets which are Member ID and Account ID.

Holds

- This relationship has a one to many relationship between the entity sets Account and Card Info. It is a one to many relationship because each account can holds many different card information as a payment methods. On the other hand, we will assume that each card information can only be store in exactly one account.

Make

- This relationship has a one to many relationship between the entity sets Account and Orders. It is a one to many relationship because each account can make many orders and each specific order can be make by one account.

Has

- This relationship has a one-to-one relation between the entity sets Item and Item Stock Levels. It is one-to-one because each item will only have a single stock level to maintain the quantity of each item in the warehouse.

contain

- This relationship has a one-to-many relation between the entity sets Orders and Item. It is one-to-many because each order can hold many different items. The reason for this is because a person is not restricted to buying only a single item.

Belongs

- This is a relationship between Item and Item Categories. The relationship is many to many, as Items can have multiple categories and categories have multiple items.

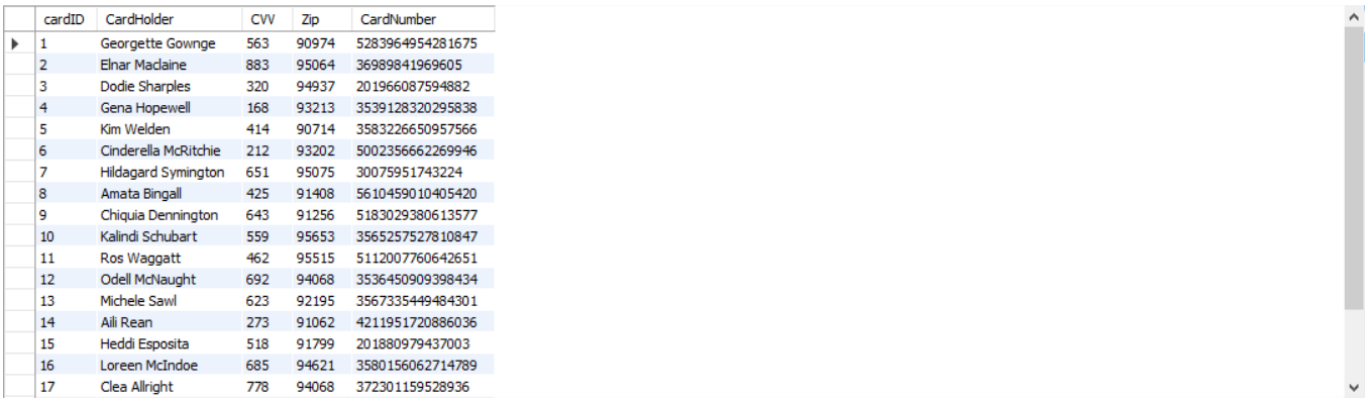
Schemas and Tuples

Entity Sets -> Relations

Account(<u>accountID</u>, memberID, email, password)

accountID	email	password	name	cell	address
1	ascarsbrick0@blogspot.com	jugXGHiV	Albina Scarsbrick	273-816-3890	08106 Golf View Street
2	scrocket1@themeforest.net	8lAznRU3	Sam Crocket	202-468-7307	7752 Pine View Circle
3	nbasili2@alexa.com	DWflzGqL9	Nolie Basili	994-128-9298	334 Melody Plaza
4	gpietruszewicz3@bbb.org	rnfSumf	Gail Pietruszewicz	269-647-6573	7 Green Ridge Street
5	rbend4@webnode.com	QmNWk9wA4PJ	Row Bend	747-339-2047	727 Dunning Court
6	tpoundford5@wikispaces.com	1zWzGV	Terrel Poundford	708-331-7934	829 Rowland Trail
7	earnal6@quantcast.com	mURtsd7WmC	Erna Arnal	983-528-1119	3009 La Follette Circle
8	lcharkham7@networksolutions.com	WMSq73o89vaG	Liza Charkham	683-846-4023	50572 Cherokee Terrace
9	fmusslewhite8@timesonline.co.uk	FNgha0d	Felipa Musslewhite	340-152-1797	8 Stephen Pass
10	ilemmon9@pcworld.com	P0pQ5vieD	Innis Lemmon	991-223-7323	17 Toban Plaza
11	mtriplowa@google.co.jp	XcqVuMf6WGYl	Mady Triplow	295-443-8330	8270 Green Crossing
12	rshadrackb@zimbio.com	2NEgpK	Reuben Shadrack	868-906-4924	5623 Victoria Drive
13	fannettsc@fc2.com	bS4SuVtLNnhL	Freeman Annetts	879-130-2731	921 Heath Pass
14	ikybertd@pagesperso-orange.fr	7lKZeqZJhGO	Isac Kybert	370-449-1348	072 Luster Center
15	tjerwoode@google.nl	NFn8M2aZRrkn	Teddie Jerwood	803-660-0104	199 Rowland Drive
16	jbinningf@naver.com	slqGp3SQJ	Justina Binning	151-469-1415	815 Dovetail Alley
17	lharesnapeg@shinystat.com	AaPUBzFgk1	Lise Haresnape	925-304-2484	208 Bunker Hill Road

CardInfo(<u>cardID</u>, cardHolder, cardNumber, CVV, zipcode)



cardID	CardHolder	CVV	Zip	CardNumber
1	Georgette Gownge	563	90974	5283964954281675
2	Elnar Maclaine	883	95064	36989841969605
3	Dodie Sharples	320	94937	201966087594882
4	Gena Hopewell	168	93213	3539128320295838
5	Kim Welden	414	90714	3583226650957566
6	Cinderella McRitchie	212	93202	5002356662269946
7	Hildagard Symington	651	95075	30075951743224
8	Amata Bingall	425	91408	5610459010405420
9	Chiquia Dennington	643	91256	5183029380613577
10	Kalindi Schubart	559	95653	3565257527810847
11	Ros Waggatt	462	95515	5112007760642651
12	Odell McNaught	692	94068	3536450909398434
13	Michele Sawl	623	92195	3567335449484301
14	Aili Rean	273	91062	4211951720886036
15	Heddi Esposita	518	91799	201880979437003
16	Loreen McIndoe	685	94621	3580156062714789
17	Clea Allright	778	94068	372301159528936

Orders(<u>orderID</u>, itemID, memberID, price)

orderID	price
1	0
2	0
3	0
4	0
5	0
6	0
7	0
8	0
9	0
10	0
11	0
12	0
13	0
14	0
15	0
NULL	NULL

Item(<u>itemID</u>, name, price, category)

itemID	name	price
1	Glass - Juice Clear 5oz 55005	0
2	Pasta - Canelloni	0
3	Ostrich - Prime Cut	0
4	Turkey - Ground. Lean	0
5	Doilies - 5, Paper	0
6	Mushroom - Chantrelle, Fresh	0
7	Foam Dinner Plate	0
8	Pasta - Rotini, Dry	0
9	Longos - Chicken Curried	0
10	Lettuce - Iceberg	0
11	Wine - Cotes Du Rhone	0
12	Garbage Bag - Clear	0
13	Pumpkin	0
14	Piping Jelly - All Colours	0
15	Wine - Zonnebloem Pinotage	0
NULL	NULL	NULL

Categories(<u>categoryID</u>, categoryName)

categoryID	name
1	Chips
2	Ice Cream
3	Water
4	Soda
5	Fruit
6	Veggies
7	Pizza
8	Soup
9	Salad
10	Veggies
11	Pizza
12	Soup
13	Baking
14	Bread
15	Cookies
NULL	NULL

StockLevels(<u>stockID</u>, itemID, stockDate, quantity)

stockID	date	quantity
1	0000-00-00	5
2	0000-00-00	12
3	0000-00-00	15
4	0000-00-00	30
5	0000-00-00	27
6	0000-00-00	25
7	0000-00-00	3
8	0000-00-00	4
9	0000-00-00	15
10	0000-00-00	15
11	0000-00-00	10
12	0000-00-00	21
13	0000-00-00	26
14	0000-00-00	20
15	0000-00-00	2
NULL	NULL	NULL

Relationships -> Relations

Holds(accountID, cardID)

accountID	cardID
1	1
1	2
1	3
2	4
3	5
5	6
6	7
7	8
7	9
7	10
11	11
12	12
13	13
14	15
14	16
14	17
16	14

Make(accountID, orderID)

accountID	orderID
1	1
2	2
3	3
4	4
5	5
6	6
7	7
8	8
9	9
10	10
11	11
12	12
13	13
14	14
15	15
NULL	NULL

Contain(orderID, itemID)

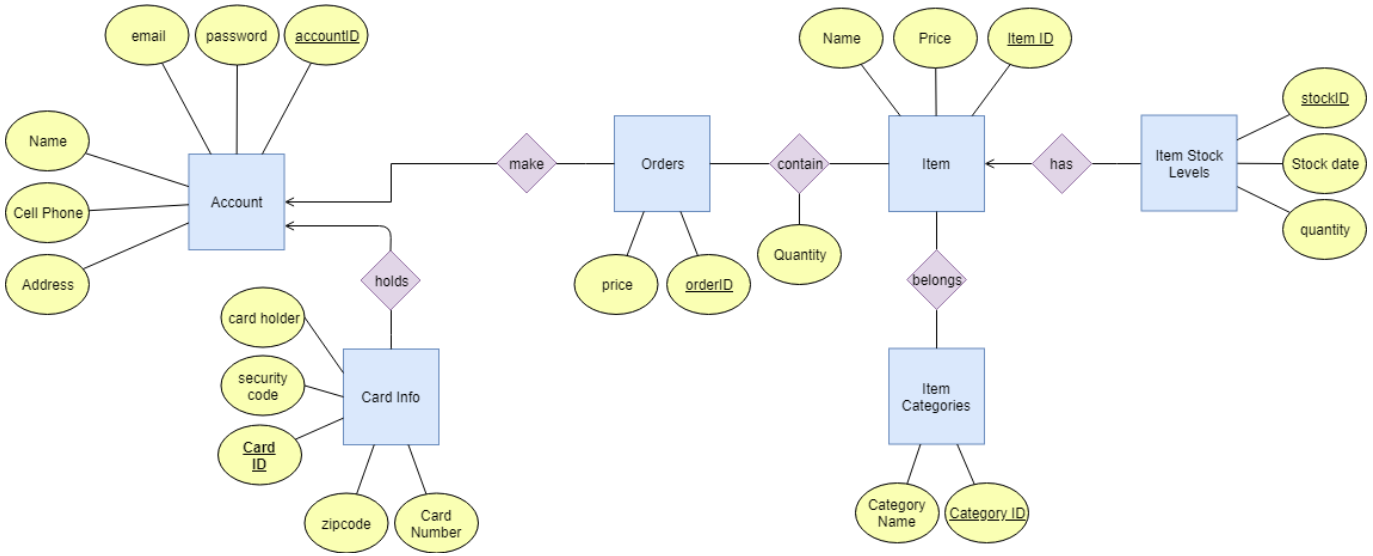
orderID	itemID	quantity
1	1	2
2	2	2
3	3	1
4	4	1
5	5	4
6	6	1
7	7	2
8	8	3
9	9	1
10	10	5
11	11	1
12	12	1
13	13	3
14	14	4
15	15	1
NULL	NULL	NULL

Has(itemID, stockID)

stockID	itemID
1	1
2	2
3	3
4	4
5	5
6	6
7	7
8	8
9	9
10	10
11	11
12	12
13	13
14	14
15	15
NULL	NULL

Belongs(itemID, categoryID)

itemID	categoryID
1	1
2	2
3	3
4	4
5	5
6	6
7	7
8	8
9	9
10	10
11	11
12	12
13	13
14	14
15	15
NULL	NULL


email
password
accountID
Name
Cell Phone
Address
Account
make
Orders
price
orderID
contain
Quantity
Name
Price
Item ID
Item
has
Item Stock Levels
stockID
Stock date
quantity
holds
card holder
security code
Card ID
Card Info
zipcode
Card Number
belongs
Item Categories
Category Name
Category ID