

-- 1. Table Creation and Analysis --

-- SQL DDL statements

DROP SCHEMA IF EXISTS Interchange CASCADE;

DROP SCHEMA

CREATE SCHEMA Interchange;

CREATE SCHEMA

SET search_path TO Interchange;

SET

CREATE TABLE Users (

 user_id text NOT NULL,

 email text NOT NULL,

 first_name text,

 last_name text NOT NULL,

 joined_date date NOT NULL,

 street text,

 city text,

 state text,

 zip text,

 categories text,

 PRIMARY KEY (user_id)

);

CREATE TABLE

CREATE TABLE Phones (

 user_id text,

 number text,

 kind text,

 PRIMARY KEY (user_id, kind),

 FOREIGN KEY (user_id) REFERENCES Users (user_id) ON DELETE CASCADE,

 CHECK (kind IN ('mobile', 'home', 'work'))

);

CREATE TABLE

CREATE TABLE Buyers (

 user_id text,

 PRIMARY KEY (user_id),

 FOREIGN KEY (user_id) REFERENCES Users (user_id) ON DELETE CASCADE

);

CREATE TABLE

```
CREATE TABLE Sellers (  
    user_id    text,  
    website    text,  
    PRIMARY KEY (user_id),  
    FOREIGN KEY (user_id) REFERENCES Users (user_id) ON DELETE CASCADE  
);
```

CREATE TABLE

```
CREATE TABLE Items (  
    item_id    text NOT NULL,  
    name       text NOT NULL,  
    price      decimal(8,2) NOT NULL,  
    category   text NOT NULL,  
    description text,  
    seller_user_id text NOT NULL,  
    list_date  date NOT NULL,  
    buyer_user_id text,  
    purchase_date date,  
    PRIMARY KEY (item_id),  
    FOREIGN KEY (seller_user_id) REFERENCES Sellers (user_id) ON DELETE CASCADE,  
    FOREIGN KEY (buyer_user_id) REFERENCES Buyers (user_id) ON DELETE CASCADE  
);
```

CREATE TABLE

```
CREATE TABLE Pictures (  
    pic_num    int NOT NULL,  
    item_id    text NOT NULL,  
    format     text NOT NULL,  
    url        text NOT NULL,  
    PRIMARY KEY (pic_num, item_id),  
    FOREIGN KEY (item_id) REFERENCES Items (item_id) ON DELETE CASCADE,  
    CHECK (format IN ('png', 'jpeg', 'mp4'))  
);
```

CREATE TABLE

```
CREATE TABLE Ads (  
    ad_id      text NOT NULL,  
    plan       text NOT NULL,  
    content    text,  
    pic_num    int NOT NULL,  
    item_id    text NOT NULL,  
    seller_user_id text NOT NULL,  
    placed_date date NOT NULL,  
    PRIMARY KEY (ad_id),  
    FOREIGN KEY (item_id) REFERENCES Items (item_id) ON DELETE CASCADE,
```

```

FOREIGN KEY (pic_num, item_id) REFERENCES Pictures (pic_num, item_id) ON DELETE CASCADE,
FOREIGN KEY (seller_user_id) REFERENCES Sellers (user_id) ON DELETE CASCADE
);

```

```

CREATE TABLE

```

```

CREATE TABLE Goods (
    item_id    text NOT NULL,
    PRIMARY KEY (item_id),
    FOREIGN KEY (item_id) REFERENCES Items (item_id) ON DELETE CASCADE
);

```

```

CREATE TABLE

```

```

CREATE TABLE Services (
    item_id    text NOT NULL,
    frequency  text NOT NULL,
    PRIMARY KEY (item_id),
    FOREIGN KEY (item_id) REFERENCES Items (item_id) ON DELETE CASCADE,
    CHECK (frequency IN ('once', 'daily', 'weekly', 'monthly', 'quarterly', 'yearly'))
);

```

```

CREATE TABLE

```

```

CREATE TABLE Ratings (
    buyer_id   text,
    seller_id  text,
    quality    int,
    pricing    int,
    delivery   int,
    rating_date date NOT NULL,
    PRIMARY KEY (buyer_id, seller_id),
    FOREIGN KEY (buyer_id) REFERENCES Buyers (user_id) ON DELETE CASCADE,
    FOREIGN KEY (seller_id) REFERENCES Sellers (user_id) ON DELETE CASCADE
);

```

```

CREATE TABLE

```

-- Items table field design observations

/*

Item_id: It is of type text. The NOT NULL constraint indicates that this field must always have a value, and cannot be left blank, every item must have a unique id. It is the PRIMARY KEY, which means it will uniquely identify each row in the table.

name: It is of type text. The NOT NULL constraint indicates that every item must always have a name

price: It is of type decimal(8,2). (8,2) specifies that the number can have up to 8 digits, with 2 of those digits being after the decimal point. The NOT NULL constraint indicates that items must always have prices.

category: It is of type text. The NOT NULL means every item must turn into a category.

description: It is of type text. It has no NOT NULL constraint, which means it can be blank. Some items may have no description.

seller_user_id: It is of type text. NOT NULL, as every item must have a seller. It references the Sellers table, using the seller_user_id attribute as the key. This means that every value in the seller_user_id attribute must correspond to a valid user_id in the Sellers table.

list_date: It is a date type. Every item must have a date.

buyer_user: It is of type text. Not required for every row.

purchase_date: It is of type date. It is not required to have a value for every row in the table.

*/

-- 2. Data Loading (COPY commands) –

```
\COPY interchange.users FROM '/Users/bixingjian/Nutstore Files/Nutstore/UCI
2023S/CS122D/HW1/data/users.csv' DELIMITER ',' CSV HEADER;
COPY 2000
```

```
\COPY interchange.phones FROM '/Users/bixingjian/Nutstore Files/Nutstore/UCI
2023S/CS122D/HW1/data/phones.csv' DELIMITER ',' CSV HEADER;
COPY 2164
```

```
\COPY interchange.buyers FROM '/Users/bixingjian/Nutstore Files/Nutstore/UCI
2023S/CS122D/HW1/data/buyers.csv' DELIMITER ',' CSV HEADER;
COPY 1523
```

```
\COPY interchange.sellers FROM '/Users/bixingjian/Nutstore Files/Nutstore/UCI
2023S/CS122D/HW1/data/sellers.csv' DELIMITER ',' CSV HEADER;
COPY 504
```

```
\COPY interchange.items FROM '/Users/bixingjian/Nutstore Files/Nutstore/UCI
2023S/CS122D/HW1/data/items.csv' DELIMITER ',' CSV HEADER;
COPY 10000
```

```
\COPY interchange.pictures FROM '/Users/bixingjian/Nutstore Files/Nutstore/UCI
2023S/CS122D/HW1/data/pictures.csv' DELIMITER ',' CSV HEADER;
COPY 20000
```

```
\COPY interchange.ads FROM '/Users/bixingjian/Nutstore Files/Nutstore/UCI 2023S/CS122D/HW1/data/ads.csv'
DELIMITER ',' CSV HEADER;
COPY 4436
```

```
\COPY interchange.goods FROM '/Users/bixingjian/Nutstore Files/Nutstore/UCI
2023S/CS122D/HW1/data/goods.csv' DELIMITER ',' CSV HEADER;
COPY 5002
```

```
\COPY interchange.services FROM '/Users/bixingjian/Nutstore Files/Nutstore/UCI
2023S/CS122D/HW1/data/services.csv' DELIMITER ',' CSV HEADER;
COPY 4974
```

```
\COPY interchange.ratings FROM '/Users/bixingjian/Nutstore Files/Nutstore/UCI
2023S/CS122D/HW1/data/ratings.csv' DELIMITER ',' CSV HEADER;
COPY 2127
```

-- 3. Query Answers --

-- A --

```
SELECT
(
SELECT count()
FROM interchange.users
) AS user_count,
(
SELECT count()
FROM interchange.items
) AS item_count,
(
SELECT count(*)
FROM interchange.ads
) AS ad_count;
user_count | item_count | ad_count
-----+-----+-----
      2000 |    10000 |    4436
(1 row)
```

-- B --

```
SELECT u.user_id, u.email, u.first_name, u.last_name, u.zip
FROM interchange.users u NATURAL JOIN interchange.buyers b NATURAL JOIN interchange.sellers s
WHERE u.email LIKE '%@aol.com';
user_id | email | first_name | last_name | zip
-----+-----+-----+-----+-----
1XG6O | Bri\_Clark36@aol.com | Brian | Clark |
5JJX3 | garcia98650@aol.com | Jeffrey | Garcia | 63735
(2 rows)
```

-- C --

```
SELECT i.item_id, i.name, i.category, i.price
FROM interchange.users u NATURAL JOIN interchange.sellers s JOIN interchange.items i ON user_id =
i.seller_user_id
WHERE u.email LIKE 'Molina58@gmail.com' AND i.buyer_user_id IS NOT NULL
ORDER BY i.price DESC;
item_id | name | category | price
-----+-----+-----+-----
VF5C5 | Barbie | Toys & Games | 1034.36
BICLS | Can Opener | Home & Kitchen | 796.56
MF8L6 | Basketball | Sports & Outdoors | 299.51
(3 rows)
```

-- D --

```
SELECT u.user_id, COUNT(*) AS num_items, ROUND(AVG(i.price)::numeric, 2) AS avg_price
FROM interchange.users u NATURAL JOIN interchange.sellers s JOIN interchange.items i ON user_id =
i.seller_user_id
```

```
WHERE u.email LIKE 'Molina58@gmail.com' AND i.buyer_user_id IS NULL
```

```
GROUP BY u.user_id, i.category;
```

```
user_id | num_items | avg_price
```

```
-----+-----+-----
```

```
Z49UX | 2 | 1482.69
```

```
Z49UX | 4 | 1128.76
```

```
Z49UX | 2 | 1282.68
```

```
Z49UX | 1 | 517.10
```

```
Z49UX | 3 | 729.05
```

```
Z49UX | 4 | 271.83
```

```
Z49UX | 3 | 1230.81
```

(7 rows)

-- E --

```
SELECT
```

```
COALESCE(u.last_name, '') || CASE WHEN u.first_name IS NOT NULL THEN ', ' || u.first_name ELSE '' END as
name,
```

```
u.email
```

```
FROM
```

```
interchange.users u NATURAL JOIN interchange.sellers s JOIN interchange.items i on user_id = i.seller_user_id
```

```
GROUP BY u.email, u.last_name, u.first_name
```

```
HAVING count(DISTINCT i.category) <= 5
```

```
ORDER BY last_name, first_name;
```

```
name | email
```

```
-----+-----
```

```
Morales | janiceMorales@yahoo.com
```

```
Torres, John | john261@gmail.com
```

(2 rows)

-- F --

```
SELECT u.user_id, u.email
```

```
FROM interchange.users u NATURAL JOIN interchange.sellers s JOIN interchange.items i ON s.user_id =
i.seller_user_id
```

```
WHERE i.category LIKE 'Electronics'
```

```
INTERSECT
```

```
SELECT u.user_id, u.email
```

```
FROM interchange.users u NATURAL JOIN interchange.sellers s JOIN interchange.items i ON s.user_id =
i.seller_user_id
```

```
WHERE i.category LIKE 'Toys & Games'
```

```
EXCEPT
```

```
SELECT u.user_id, u.email
```

```

FROM interchange.users u
NATURAL JOIN interchange.sellers s JOIN interchange.items i ON s.user_id = i.seller_user_id
WHERE i.category IN ('Home & Kitchen', 'Pet Supplies')
ORDER BY user_id ASC;
user_id |      email

```

```

-----+-----
08KUN  | thompson\_roger@gmail.com
231ZN  | robinson635@gmail.com
AWXDQ  | gonzales6725@aol.com
I8U4Z  | cole93560@gmail.com
PHPNC  | paul.rivera@gmail.com
PRF6N  | murray5280@gmail.com
RYVDX  | 9059stephen9994@gmail.com
YFIBA  | adrianaacevedo960@gmail.com
(8 rows)

```

```

-- G --
SELECT u.email, u.state, array_length(string_to_array(categories, ','), 1) AS num_interests
FROM interchange.users u
WHERE u.categories IS NOT NULL
ORDER BY num_interests DESC
LIMIT 10;

```

```

          email          | state | num_interests
-----+-----+-----
katjacobs@gmail.com    |      |          13
kev\_ramirez@gmail.com  | Illinois |          13
dia70@gmail.com        | New Mexico |          13
carrollchristine@hotmail.com |      |          13
03jordanpatricia91782@gmail.com | Illinois |          13
And416@gmail.com       |      |          13
smith.Nicholas@gmail.com | Utah   |          13
donovandestiny36@gmail.com | Alabama |          13
thomas.knight@aol.com  | Minnesota |          12
Smith2537@yahoo.com    | Connecticut |          12
(10 rows)

```

```

-- H --
SELECT category, COUNT(DISTINCT user_id) AS num_users
FROM (
  SELECT user_id, UNNEST(string_to_array(categories, ',')) AS category
  FROM interchange.users
) AS user_categories
GROUP BY category
ORDER BY num_users DESC;
category | num_users

```

```

-----+-----
Beverages          |    685
Paper, Cleaning, & Home |    680
Pet Care           |    671
Condiments, Spice, & Bake |    670
Cookies, Snacks, & Candy |    667
Deli               |    665
Breakfast & Cereal   |    665
Meat & Seafood       |    665
Personal Care & Health |    662
Frozen Foods        |    658
Canned Goods & Soups |    651
Bread & Bakery       |    650
Baby Care           |    647
Grains, Pasta, & Sides |    647
Dairy, Eggs, & Cheese |    634
Fruits & Vegetables  |    628

```

(16 rows)

-- | --

-- View DDL:

```

CREATE VIEW interchange.RatedSellers AS
SELECT
  u.last_name,
  u.first_name,
  s.user_id AS seller_id,
  ((0.4 * COALESCE(AVG(r.quality), 0) +
    0.4 * COALESCE(AVG(r.pricing), 0) +
    0.2 * COALESCE(AVG(r.delivery), 0))::decimal(3,2)) AS overall,
  COALESCE(AVG(r.quality), 0)::decimal(3,2) AS quality,
  COALESCE(AVG(r.pricing), 0)::decimal(3,2) AS pricing,
  COALESCE(AVG(r.delivery), 0)::decimal(3,2) AS delivery
FROM
  interchange.sellers s
  NATURAL JOIN interchange.users u
  JOIN interchange.ratings r ON s.user_id = r.seller_id
GROUP BY
  s.user_id,
  u.first_name,
  u.last_name;
CREATE VIEW
-- View test query:
SELECT *
FROM interchange.RatedSellers

```


ORDER BY overall DESC

LIMIT 10;

last_name | first_name | seller_id | overall | quality | pricing | delivery

```
-----+-----+-----+-----+-----+-----+-----
Landry   | Christopher | E189I   | 4.60 | 4.00 | 5.00 | 5.00
Yates    | Zachary    | 36SYH   | 4.55 | 5.00 | 4.50 | 3.75
Swanson  | Jaime      | 6P3VN   | 4.50 | 5.00 | 4.50 | 3.50
Murray   | Robert     | 7T5MJ   | 4.40 | 5.00 | 4.00 | 4.00
Baldwin  | Samuel     | QQB6Q   | 4.40 | 5.00 | 4.00 | 4.00
Fitzgerald |          | FWVAJ   | 4.30 | 5.00 | 3.50 | 4.50
Frey     | Adrian     | L9Y33   | 4.27 | 3.67 | 5.00 | 4.00
James    | Johnny     | X342E   | 4.20 | 3.00 | 5.00 | 5.00
Diaz     | Mary       | QXXKB   | 4.20 | 5.00 | 3.67 | 3.67
Vasquez  | George     | M2HT6   | 4.20 | 5.00 | 3.00 | 5.00
```

(10 rows)

--J--

-- Table alteration DDL:

ALTER TABLE interchange.sellers

ADD COLUMN overall_rating decimal(3,2);

ALTER TABLE

-- Table update query:

UPDATE interchange.sellers

SET overall_rating = interchange.RatedSellers.overall

FROM interchange.RatedSellers

WHERE interchange.sellers.user_id = RatedSellers.seller_id;

UPDATE 492

-- Change verification query:

SELECT rs.*, s.overall_rating

FROM interchange.RatedSellers rs JOIN interchange.sellers s ON rs.seller_id = s.user_id;

last_name | first_name | seller_id | overall | quality | pricing | delivery | overall_rating

```
-----+-----+-----+-----+-----+-----+-----+-----
Farley    | Patricia   | 142WW   | 2.40 | 3.00 | 2.00 | 2.00 | 2.40
Pratt     | Kristen    | WHC3M   | 2.97 | 3.43 | 3.00 | 2.00 | 2.97
Marshall  | Christopher | 152MD   | 1.60 | 4.00 | 0.00 | 0.00 | 1.60
Davis     |            | FCQGQ   | 3.60 | 4.00 | 2.50 | 5.00 | 3.60
Lucas     | Gary       | EDOMX   | 2.80 | 3.00 | 4.00 | 0.00 | 2.80
Rodriguez | Paul       | IH8AP   | 1.80 | 2.00 | 1.00 | 3.00 | 1.80
Murray    | Robert     | 7T5MJ   | 4.40 | 5.00 | 4.00 | 4.00 | 4.40
Jackson   | Shawn      | VX9SU   | 2.87 | 3.00 | 3.00 | 2.33 | 2.87
King      | Bryan      | UP16N   | 1.80 | 0.00 | 2.00 | 5.00 | 1.80
Phillips  | Paul       | ZVZGY   | 3.77 | 4.25 | 3.33 | 3.67 | 3.77
James     | Michael    | HFAMO   | 1.00 | 0.00 | 2.50 | 0.00 | 1.00
Burton    | Bobby      | T4T3I   | 1.13 | 1.00 | 0.00 | 3.67 | 1.13
```

Miller	Mark	JEEP3	1.50	1.00	1.00	3.50	1.50
Bridges	Ralph	FQUO1	2.37	3.67	2.25	0.00	2.37
Cole		0HGJC	1.93	1.50	2.00	2.67	1.93
Guzman	Kiara	3RNZG	2.70	4.00	2.25	1.00	2.70
White	Danny	L8LC6	3.60	5.00	2.33	3.33	3.60
West	Brandon	7VWUB	1.40	3.00	0.00	1.00	1.40
Walls	Deanna	9ZP9F	0.20	0.00	0.00	1.00	0.20
Hutchinson	Jason	6FWZI	0.60	1.50	0.00	0.00	0.60
Mills	Stephen	O9NN6	3.30	3.50	3.00	3.50	3.30
Brown	David	85TQL	3.80	5.00	3.00	3.00	3.80
Thompson	Jeremy	J83G9	2.60	3.00	3.00	1.00	2.60
Morales	Jason	GV6M6	2.47	2.33	2.33	3.00	2.47
Scott	Michael	QFR1K	3.40	3.00	4.00	3.00	3.40
Sanders	Marvin	UADIT	3.01	3.33	4.20	0.00	3.01
Delgado	Meghan	2SZAM	4.00	5.00	4.00	2.00	4.00
Mitchell	Justin	K3UHS	2.80	4.00	3.00	0.00	2.80
Jones		YDQ24	1.40	1.00	2.50	0.00	1.40
Torres	Brian	RJWPA	2.75	1.50	4.00	2.75	2.75
Davis	Jennifer	V2EVU	3.10	2.25	3.00	5.00	3.10
Nelson		J5PAC	2.80	4.00	2.50	1.00	2.80
Lloyd	Lindsey	NCDRU	3.40	5.00	2.00	3.00	3.40
Hernandez		C1NTG	2.87	2.33	3.33	3.00	2.87
French	Kristin	1JA6J	3.70	3.00	5.00	2.50	3.70
Crawford	David	S3AB0	0.80	0.00	0.00	4.00	0.80
Robinson	Sarah	UOQ2K	3.60	3.00	5.00	2.00	3.60
Mccoy		Q6RDS	1.20	1.00	2.00	0.00	1.20
Pennington	Kristin	BKW17	2.20	2.00	2.50	2.00	2.20
Johnson	Darren	KGD5Z	2.93	3.50	2.00	3.67	2.93
Kelly	Teresa	05M7F	2.20	1.00	4.00	1.00	2.20
Marshall		PQEAZ	2.00	4.00	1.00	0.00	2.00
West	Taylor	U98HN	3.11	3.60	2.33	3.67	3.11
Nguyen	Kevin	WSHUH	2.23	0.00	4.33	2.50	2.23
Lewis	Cody	FFBXJ	2.20	1.00	3.50	2.00	2.20
Russell		X9W2Z	2.40	3.00	3.00	0.00	2.40
Stone		RLY94	2.10	0.00	3.00	4.50	2.10
Freeman	Debra	ISPDE	3.27	4.00	2.67	3.00	3.27
Lee	Madison	RSBL9	2.80	3.33	2.00	3.33	2.80
Guzman	Elizabeth	SB3L6	1.80	2.00	1.33	2.33	1.80
Smith	Robert	519G2	2.60	4.00	0.00	5.00	2.60
Hale		AADER	4.00	5.00	4.00	2.00	4.00
Byrd	Antonio	1MXH9	2.40	2.00	2.00	4.00	2.40
Wallace	Daniel	N3780	4.07	3.50	5.00	3.33	4.07
Ellis	Lisa	H7FKP	2.53	2.00	3.00	2.67	2.53
Jackson	Tiffany	EBQH2	3.20	4.00	3.00	2.00	3.20

Davis	Laura	GQM6L	2.40	1.00	3.00	4.00	2.40
Reid	Andrea	X7OBY	3.20	3.00	4.00	2.00	3.20
Gomez	Marie	ARQJD	3.60	4.00	5.00	0.00	3.60
Moreno	Eric	GJK7R	0.60	0.00	1.00	1.00	0.60
Ortiz	Lauren	HH8AJ	2.90	3.00	3.00	2.50	2.90
Peters	Ryan	Y1OZO	2.00	1.00	2.00	4.00	2.00
Morales	Jeffrey	LHRYU	1.80	0.00	2.50	4.00	1.80
Flynn	Brittany	3I68A	2.70	3.00	2.75	2.00	2.70
Mcdonald	Robert	1H9CX	2.40	2.00	3.00	2.00	2.40
Castro		HVJUT	1.80	2.00	2.50	0.00	1.80
Hartman	Michelle	CZOIF	2.20	1.50	4.00	0.00	2.20
White	Dawn	IXU4J	3.13	1.00	5.00	3.67	3.13
Hunter	Stephen	ZB7CT	2.87	4.50	1.50	2.33	2.87
Williams	Madison	F1G3J	0.40	0.00	1.00	0.00	0.40
Beasley	Rita	G558B	3.80	4.00	4.00	3.00	3.80
Meyer	Angela	JH82V	2.80	1.00	4.00	4.00	2.80
Delgado	Kelly	M63IT	1.50	1.00	1.00	3.50	1.50
Frazier	Stephanie	5XI94	2.93	2.50	3.50	2.67	2.93
Curry	John	KVQRA	2.77	2.50	2.67	3.50	2.77
Zimmerman	Brett	KV5S9	2.20	1.00	4.00	1.00	2.20
Lucero		6WQ8P	3.20	3.00	5.00	0.00	3.20
Hayes	Jessica	7E9AJ	2.40	0.00	5.00	2.00	2.40
Lam	Barbara	HC0DY	3.73	3.50	4.33	3.00	3.73
Jackson	Tommy	2LOF1	2.60	3.00	1.00	5.00	2.60
Byrd	Denise	QTM9A	2.30	2.50	1.00	4.50	2.30
Mcbride	Christopher	JI8HS	3.80	5.00	3.50	2.00	3.80
Jones	Kim	EJ8AM	1.70	0.00	3.50	1.50	1.70
Williamson	John	N8P04	1.00	0.00	2.00	1.00	1.00
James	Johnny	X342E	4.20	3.00	5.00	5.00	4.20
Jackson	David	CAFPE	0.80	0.00	1.00	2.00	0.80
Cameron	Stephen	P1ZUA	3.15	2.75	3.75	2.75	3.15
Le	Derrick	IP7TK	3.13	3.67	3.00	2.33	3.13
Parks	Jennifer	CTMHY	3.47	3.00	3.67	4.00	3.47
Butler	Travis	87U6Q	1.60	3.00	0.00	2.00	1.60
Harrell	Susan	SEOMV	3.60	4.00	4.00	2.00	3.60
Harrison	Todd	A34BI	1.80	2.00	0.00	5.00	1.80
Woods	Michael	1VT3O	2.70	2.50	3.00	2.50	2.70
Maldonado	Tammy	XWXLZ	1.60	3.00	1.00	0.00	1.60
Zamora	Tracy	07RB8	2.70	3.00	2.00	3.50	2.70
Weiss	Casey	UDZHR	3.25	5.00	2.00	2.25	3.25
Gardner	Heather	L18JT	1.00	2.50	0.00	0.00	1.00
Bentley	Amanda	0R2KU	2.87	3.33	2.67	2.33	2.87
Robinson	Christopher	L6USX	3.20	3.00	3.50	3.00	3.20
Smith	Manuel	CVK2U	0.80	0.00	2.00	0.00	0.80

Kennedy	Ashley	4L0BA	3.80	5.00	3.00	3.00	3.80
Schneider	Stephen	V1RZB	2.40	5.00	1.00	0.00	2.40
Dixon	Eric	0BMS5	2.80	3.00	3.00	2.00	2.80
Vaughn	Sarah	OETM3	1.00	1.00	0.00	3.00	1.00
Diaz	Mary	QXXKB	4.20	5.00	3.67	3.67	4.20
Stewart	Ronald	X1CL7	2.13	1.33	2.00	4.00	2.13
Burns	Todd	HQF90	2.80	3.00	4.00	0.00	2.80
White	Patrick	OE791	3.20	3.67	2.83	3.00	3.20
Cooke	Jacqueline	6QJGV	2.20	1.50	3.00	2.00	2.20
Johnson	Rodney	LBHMK	1.90	1.00	2.50	2.50	1.90
House	Madeline	VJL5E	2.60	3.00	2.00	3.00	2.60
Miller	Heather	TH5WQ	1.60	0.00	3.00	2.00	1.60
Johnson	Julie	MK3V5	2.60	2.50	4.00	0.00	2.60
Lopez		84ZNK	0.80	0.00	2.00	0.00	0.80
Rubio	Shirley	LJNGC	3.20	3.00	3.00	4.00	3.20
Rivera	Paul	PHPNC	2.20	1.00	3.00	3.00	2.20
Owen	Jason	8EBHM	2.90	4.00	2.00	2.50	2.90
Martin	Ricky	VZNU6	0.90	0.00	1.00	2.50	0.90
Baird	Johnny	UBB1Y	2.60	2.00	2.50	4.00	2.60
Patrick	Jon	MQBSG	1.60	3.00	0.00	2.00	1.60
Becker	Deanna	Q9QW3	1.80	2.50	2.00	0.00	1.80
Smith	Wendy	V5MBV	3.30	5.00	2.00	2.50	3.30
Sutton	Tracy	UVBIT	3.60	2.00	5.00	4.00	3.60
Ochoa	Jesse	RM38H	0.40	0.00	0.00	2.00	0.40
Stone	Michael	6NS86	3.57	2.00	4.67	4.50	3.57
Bell		YRL14	2.20	4.00	1.00	1.00	2.20
Wilson		670AO	3.80	5.00	3.50	2.00	3.80
Perez	Bernard	4DGUK	2.00	2.50	1.00	3.00	2.00
Wilson	Michelle	EXO6D	2.20	1.50	4.00	0.00	2.20
Nguyen	Angela	H2NH0	1.20	2.00	1.00	0.00	1.20
Stewart	Jennifer	549RZ	2.00	1.50	2.00	3.00	2.00
Osborne		3DEPB	3.63	2.33	5.00	3.50	3.63
Escobar	John	HGTUB	2.30	2.75	1.00	4.00	2.30
Bond	Veronica	O0KP9	3.43	4.00	3.33	2.50	3.43
Romero	Daniel	R7K4O	1.40	0.00	1.00	5.00	1.40
Morrison	Jeremy	ZLIUE	1.90	1.00	2.00	3.50	1.90
Duffy	Michael	8F6ZS	2.40	4.00	0.00	4.00	2.40
Murphy	Christopher	G9Q2G	2.47	2.00	3.00	2.33	2.47
Mckinney	William	Y1GW1	3.10	4.50	1.75	3.00	3.10
Mason		KSZOZ	1.20	3.00	0.00	0.00	1.20
Williams	Matthew	P8DKB	3.88	5.00	3.00	3.40	3.88
Wise	Nancy	Q0UI3	0.80	0.00	1.00	2.00	0.80
Flynn	Roberto	HSQAJ	2.95	2.00	4.00	2.75	2.95
Webb	Stacy	DZC76	4.13	4.00	5.00	2.67	4.13

Hodges		1149O	3.40	4.00	4.00	1.00	3.40
Mcclain	Heather	CZ859	3.87	3.67	5.00	2.00	3.87
Woods	Danielle	449OC	2.60	3.00	3.00	1.00	2.60
Frey	Adrian	L9Y33	4.27	3.67	5.00	4.00	4.27
Scott	Sean	TYD9O	3.20	3.00	4.00	2.00	3.20
Peck		CCMQG	2.13	0.00	3.50	3.67	2.13
Fitzgerald		FWVAJ	4.30	5.00	3.50	4.50	4.30
Maddox	Adrian	FYQCT	1.00	2.00	0.00	1.00	1.00
Alexander		YA5CE	1.73	0.00	4.33	0.00	1.73
Reyes	Gina	P3UIF	3.37	2.67	3.50	4.50	3.37
Levine	Morgan	9FJ8S	2.47	2.50	1.67	4.00	2.47
Luna	Shelly	C0UHU	2.20	3.33	1.00	2.33	2.20
Guzman	Holly	LZAU3	2.80	3.50	2.00	3.00	2.80
Sullivan	George	8Q3XK	3.40	5.00	1.00	5.00	3.40
Nelson	Christopher	CGC2X	2.40	1.00	2.50	5.00	2.40
Garcia	Jeffrey	5JJX3	1.40	1.00	1.00	3.00	1.40
Miller	Ryan	8MZDC	2.93	2.50	3.33	3.00	2.93
Caldwell		7ERSM	2.20	2.00	2.00	3.00	2.20
Gray	Jennifer	PBHFC	3.53	3.33	4.00	3.00	3.53
Valenzuela	Timothy	1HBQW	3.07	1.00	5.00	3.33	3.07
Maynard	Christine	F1I7H	1.87	4.00	0.00	1.33	1.87
Underwood	Angie	QN99Y	2.47	3.00	1.00	4.33	2.47
Hill	Lindsey	QWAWV	2.80	2.00	4.00	2.00	2.80
Newman	Thomas	L3VKI	0.80	0.00	1.00	2.00	0.80
Baker	Alison	3KLP3	2.00	3.00	2.00	0.00	2.00
Singleton	Jessica	BX2PI	0.80	0.00	0.00	4.00	0.80
Solomon	Caleb	IBCNI	3.13	3.33	2.50	4.00	3.13
Hayden	William	XYUHX	3.27	3.00	3.67	3.00	3.27
Lewis		D73LI	3.73	4.00	4.33	2.00	3.73
Armstrong	Seth	22VQ9	3.00	1.00	4.00	5.00	3.00
Hobbs		A5WQ0	3.22	2.43	3.80	3.67	3.22
Garcia	Clayton	TIQ1A	3.60	5.00	4.00	0.00	3.60
Friedman	Christopher	TJX73	2.00	0.00	5.00	0.00	2.00
Browning	Hector	SAZF9	0.00	0.00	0.00	0.00	0.00
Daniels		0V5C9	3.43	3.00	3.67	3.80	3.43
Sanchez	Sharon	FFZPQ	2.33	2.33	2.50	2.00	2.33
Russo	Donna	DNCLE	1.60	2.50	0.00	3.00	1.60
Sanchez	Daniel	1E2BT	3.30	3.00	4.00	2.50	3.30
Kelley	Leonard	MRY5A	2.07	2.50	1.50	2.33	2.07
Bautista	Zoe	7H518	2.20	4.50	1.00	0.00	2.20
Barnett	Matthew	8K3RE	2.40	3.50	2.00	1.00	2.40
Baldwin	Samuel	QQB6Q	4.40	5.00	4.00	4.00	4.40
Ward	Amber	E9K7C	2.91	2.60	3.00	3.33	2.91
Barnes	Kelly	NJN0G	2.30	3.00	2.00	1.50	2.30

Andrews	Jim	46YCO	1.20	0.00	3.00	0.00	1.20
Garcia	Michael	BW3MU	2.00	5.00	0.00	0.00	2.00
Bass	Henry	WUSF0	1.80	0.00	3.00	3.00	1.80
Acevedo	Adriana	YFIBA	2.60	2.50	2.50	3.00	2.60
Molina	Jesse	Z49UX	2.20	3.00	0.00	5.00	2.20
Vega	Jose	3KCY4	0.20	0.00	0.00	1.00	0.20
Boyle	Kevin	ET59G	3.40	3.00	4.00	3.00	3.40
Hamilton	Scott	GQIZU	1.47	2.67	1.00	0.00	1.47
Torres	Richard	7TOUB	2.00	0.00	3.00	4.00	2.00
Ingram	Sarah	6GSGP	2.42	2.80	2.75	1.00	2.42
Clayton	Juan	0780O	3.40	4.00	3.00	3.00	3.40
Norton	James	NBQEK	3.00	5.00	1.00	3.00	3.00
Myers	Cassidy	IJI6N	1.60	3.00	0.00	2.00	1.60
Edwards	Timothy	12TJH	1.80	0.00	2.00	5.00	1.80
Nguyen	Donna	CA1H1	1.67	2.00	1.50	1.33	1.67
Mendoza	Anna	GVYOF	3.20	3.00	3.00	4.00	3.20
Davis	Jack	8RY42	2.93	2.67	2.67	4.00	2.93
Cook	William	DPGAP	3.60	5.00	4.00	0.00	3.60
Franklin	Jessica	F98VS	1.60	0.00	3.50	1.00	1.60
Blackwell	Adrian	O8YYV	3.93	4.00	5.00	1.67	3.93
Cole	Lisa	ZST93	3.30	4.00	3.00	2.50	3.30
Gonzales	Adrian	NKNLM	1.00	0.00	1.00	3.00	1.00
Sparks	Jill	P8UOK	0.00	0.00	0.00	0.00	0.00
Oneill	Lori	29003	3.20	2.00	3.50	5.00	3.20
Wiley	Gloria	SGSRE	2.87	4.00	2.00	2.33	2.87
Ball	Amber	VRWGT	2.73	2.00	3.33	3.00	2.73
Miller	Michael	UEVYS	3.33	3.33	3.00	4.00	3.33
May	Jim	TJ6FX	3.67	2.75	5.00	2.83	3.67
Rivas	Timothy	AXYFV	2.70	3.00	2.00	3.50	2.70
Torres	John	4GR4S	1.67	1.00	2.00	2.33	1.67
Navarro	Richard	N169E	4.04	4.00	4.60	3.00	4.04
Garcia	Todd	FXVJ8	1.20	2.00	0.00	2.00	1.20
French	Jennifer	FZ6BO	2.33	4.33	1.00	1.00	2.33
Turner	Chris	Z0LJU	4.00	3.67	5.00	2.67	4.00
Evans	Jesse	VW8H6	2.53	2.67	2.00	3.33	2.53
Nolan	Christina	XU609	3.00	2.00	4.00	3.00	3.00
Thompson	Roger	08KUN	3.00	3.50	3.50	1.00	3.00
Wagner	Joshua	PINBW	1.60	0.00	3.00	2.00	1.60
Larson	Lawrence	6ZG2P	2.13	1.00	3.50	1.67	2.13
Wiggins	Kevin	SHGFE	1.80	2.50	1.50	1.00	1.80
Smith	Erin	UHYY9	2.40	2.00	2.50	3.00	2.40
Fox	Carlos	L20JI	1.00	0.00	2.50	0.00	1.00
Norton		FUAY0	3.20	2.00	5.00	2.00	3.20
Davidson	Kim	NJYKN	3.03	2.33	3.50	3.50	3.03

Anderson	Nathaniel	7B5PR	1.80	1.00	3.00	1.00	1.80
Yates	Zachary	36SYH	4.55	5.00	4.50	3.75	4.55
Acosta	Brian	RPWW0	3.20	3.00	4.00	2.00	3.20
Mills	William	8HSSP	2.33	2.50	3.33	0.00	2.33
Baird		R2YNB	2.00	4.00	0.00	2.00	2.00
Murray	Lisa	PRF6N	3.00	2.00	4.00	3.00	3.00
Hamilton		GKTCF	2.40	2.00	3.50	1.00	2.40
Griffith	James	8LJTP	3.73	4.50	3.50	2.67	3.73
Ramos	Devin	IJ61L	2.90	1.00	4.00	4.50	2.90
Woodard	Kaitlyn	Y4HF3	1.00	0.00	0.00	5.00	1.00
Colon	Robert	5MYGN	2.00	4.00	0.00	2.00	2.00
Smith	Kenneth	0C7T4	3.00	5.00	2.00	1.00	3.00
Leonard		QX1AY	2.81	3.33	2.20	3.00	2.81
Duncan	Brandi	SNR6X	2.13	3.33	1.00	2.00	2.13
Russo	Mark	QLECR	2.40	3.50	2.00	1.00	2.40
Scott	Kristen	XV9E8	3.00	4.00	3.00	1.00	3.00
Hendrix	Joshua	3AFOH	4.07	3.33	5.00	3.67	4.07
Hampton	Eric	R8LB9	3.40	1.00	5.00	5.00	3.40
Pratt	David	VJV2D	0.00	0.00	0.00	0.00	0.00
Lee		G2W79	3.10	3.00	2.50	4.50	3.10
Vasquez	George	M2HT6	4.20	5.00	3.00	5.00	4.20
Payne	Eric	JCCF8	2.00	0.00	2.50	5.00	2.00
Smith	Christopher	0YDV7	2.00	2.00	3.00	0.00	2.00
Brown	Alan	YRTVH	3.50	4.00	3.00	3.50	3.50
Kim	Danielle	4PJSD	0.70	1.00	0.00	1.50	0.70
Anderson	Bradley	PB6Z6	3.14	2.60	3.75	3.00	3.14
Patterson	Craig	T40C2	2.30	2.50	2.50	1.50	2.30
House	Tammy	W7QGR	2.00	0.00	3.00	4.00	2.00
Jensen	John	L4VJ1	3.60	2.50	5.00	3.00	3.60
Dixon	Daniel	FUS1Y	2.87	3.50	2.00	3.33	2.87
Fields	Julia	JZ1WL	2.40	2.00	4.00	0.00	2.40
Smith	Melissa	ZXBS8	3.50	4.00	3.00	3.50	3.50
Walker	Amanda	XMWLA	2.20	2.00	3.50	0.00	2.20
Walter	Steven	JWXSS	3.53	2.33	5.00	3.00	3.53
Haynes		BV5DO	2.60	3.00	3.00	1.00	2.60
Johnson	Eric	51WHM	2.80	3.00	4.00	0.00	2.80
Jones		87BU7	1.60	1.00	3.00	0.00	1.60
Garcia	Victoria	9CK79	1.00	1.00	1.50	0.00	1.00
Flores	Scott	BIVH0	0.80	1.00	1.00	0.00	0.80
Hamilton	Linda	9EN65	1.20	0.00	2.00	2.00	1.20
Ayala	James	FRH4L	3.80	3.00	5.00	3.00	3.80
Garcia	Christopher	6RCV4	3.80	3.00	5.00	3.00	3.80
Sexton	Angela	Q1X68	2.84	3.50	2.60	2.00	2.84
Keller	Andrew	SFE8H	3.00	2.50	3.00	4.00	3.00

Mckee	Rachel	K3VTH	2.87	4.00	1.67	3.00	2.87
Flores	Douglas	NKKLD	2.30	1.25	3.00	3.00	2.30
Miller	Jessica	9CR7S	0.80	0.00	1.50	1.00	0.80
Schroeder	Justin	BBHBZ	2.30	3.00	2.00	1.50	2.30
Weber	Kyle	IUWG8	2.20	2.00	1.00	5.00	2.20
Sanchez	Jessica	FWB4W	2.40	4.00	2.00	0.00	2.40
Simmons	Amanda	8AOIB	1.40	3.00	0.00	1.00	1.40
Fitzgerald		NL2WY	1.20	2.00	0.00	2.00	1.20
Myers	Daniel	A7G8C	2.40	5.00	0.00	2.00	2.40
Allen	Pamela	PV7VX	3.30	3.75	3.00	3.00	3.30
Huerta	Ian	JY3X4	3.37	2.75	4.00	3.33	3.37
Smith		Q17SE	0.40	0.00	1.00	0.00	0.40
Bradley	Tina	7IVK8	2.00	1.50	1.50	4.00	2.00
Duncan	Marc	YAK94	2.40	2.50	2.00	3.00	2.40
Rollins		NUPCW	2.50	2.00	2.75	3.00	2.50
Rios	Ryan	D7CK2	3.00	3.33	3.00	2.33	3.00
Molina	Trevor	F5WTM	3.08	2.00	4.33	2.75	3.08
Waller	Alexandria	4OUJ8	2.20	3.00	2.50	0.00	2.20
Phillips	Michael	QCIEZ	2.20	4.00	1.00	1.00	2.20
Knight	Thomas	1VPD1	3.33	3.33	3.50	3.00	3.33
Chase	Danielle	3QPJE	3.00	3.50	2.00	4.00	3.00
Jacobs		W2FN3	2.47	2.67	3.50	0.00	2.47
Kirk	Thomas	JCA8Q	1.33	3.33	0.00	0.00	1.33
Sanchez	Robin	3FKG7	1.47	2.33	0.00	2.67	1.47
Kelly	Jon	PRBZA	2.38	2.50	2.33	2.25	2.38
Chambers	Margaret	LZLDV	3.97	4.25	3.67	4.00	3.97
Allen	Anthony	V20LN	2.33	1.50	3.00	2.67	2.33
Mills	Alison	KVJNB	0.00	0.00	0.00	0.00	0.00
Gonzales	Caitlyn	87CKX	3.07	3.17	3.50	2.00	3.07
Mitchell	Erica	JQY1C	2.40	4.00	1.00	2.00	2.40
Nguyen	Robert	9CWE6	1.00	0.00	1.00	3.00	1.00
Landry	Christopher	E189I	4.60	4.00	5.00	5.00	4.60
Beck	Tonya	86J10	3.80	5.00	3.00	3.00	3.80
Williamson	James	AZQD3	3.40	3.00	4.50	2.00	3.40
Norton	Billy	OPGY0	4.20	5.00	3.00	5.00	4.20
Chavez	Justin	LAAAV	2.20	4.00	1.00	1.00	2.20
Robinson	Christina	231ZN	1.20	0.00	2.00	2.00	1.20
Sanders	Cynthia	EGA3T	2.40	4.00	1.00	2.00	2.40
Long	James	OREG1	2.80	4.00	1.50	3.00	2.80
Perez	Lisa	CUVCD	3.62	4.00	3.67	2.75	3.62
Hunt	Renee	VPIG7	1.20	0.00	3.00	0.00	1.20
Olsen	Nathan	LQ8DW	4.20	3.50	5.00	4.00	4.20
Evans	Rodney	9X7GU	4.07	5.00	4.00	2.33	4.07
White	Jennifer	BHDQW	2.40	3.50	0.00	5.00	2.40

Smith	Rhonda	K5CLT	3.50	4.00	3.00	3.50	3.50
Fletcher	Joyce	MABWW	2.52	2.00	2.80	3.00	2.52
Hall	James	9WYAI	1.80	0.00	3.00	3.00	1.80
Hayes		4CXZQ	1.80	0.00	3.00	3.00	1.80
Johnson	Daniel	U5R93	0.20	0.00	0.00	1.00	0.20
Hall	Thomas	1QXIF	3.80	3.00	5.00	3.00	3.80
Singleton	Monica	4MSI6	2.00	2.75	2.25	0.00	2.00
Crawford	Sharon	5H4D3	1.70	1.00	2.00	2.50	1.70
Shah	Steven	6IPKS	3.93	3.67	3.67	5.00	3.93
Strong	Jacob	G06XS	1.80	0.00	4.50	0.00	1.80
Taylor	Ronald	LV4UC	2.20	3.00	0.00	5.00	2.20
Richardson	Kevin	1WI5Q	2.80	1.50	3.00	5.00	2.80
Nichols	Andrew	6A1CR	1.20	3.00	0.00	0.00	1.20
Brady	Brian	OTAU7	2.90	1.50	4.50	2.50	2.90
Hanna	Shannon	Q24R1	2.00	2.00	3.00	0.00	2.00
Humphrey		KYTZ7	0.80	2.00	0.00	0.00	0.80
Morales		6PA04	2.80	2.75	3.00	2.50	2.80
Martinez	Stacy	20AR2	2.73	2.33	4.00	1.00	2.73
Jones	Vanessa	OZBPO	2.40	3.00	3.00	0.00	2.40
Castro	Heather	WJRLZ	3.13	4.00	2.50	2.67	3.13
Velez	Isaac	CA969	3.20	4.00	2.50	3.00	3.20
Baker	Maria	6KXC3	1.93	4.33	0.00	1.00	1.93
Mejia	John	CXDQI	2.90	3.50	2.75	2.00	2.90
Shelton	Evan	BF3QQ	3.00	1.00	4.00	5.00	3.00
Ramirez	Eric	62876	1.20	1.00	0.00	4.00	1.20
Campbell	Jennifer	AWFGJ	3.05	3.50	2.80	2.67	3.05
White	Kevin	GPJ8L	1.20	1.00	2.00	0.00	1.20
Williams	Yolanda	UFNWU	2.07	0.00	2.67	5.00	2.07
Page	Kelly	RBL4D	1.70	3.00	0.00	2.50	1.70
Durham	Elizabeth	W3UYZ	1.40	2.50	1.00	0.00	1.40
Barnes	Philip	AZB2M	2.23	2.17	2.40	2.00	2.23
Garcia	Crystal	3KFLS	3.33	3.00	3.00	4.67	3.33
Schultz	Amber	4FD3N	1.80	0.00	2.50	4.00	1.80
Thomas	Heather	QMHWG	2.80	3.00	3.00	2.00	2.80
Peterson	Ashley	KR138	1.87	2.00	1.00	3.33	1.87
Flowers	Francis	N5X40	2.80	2.50	3.00	3.00	2.80
Mcintosh	Kyle	5NRYI	3.60	4.00	5.00	0.00	3.60
Oconnell	Erin	PCL39	1.60	1.00	2.00	2.00	1.60
Smith	Wanda	Z6UIX	1.47	1.00	2.67	0.00	1.47
Jones	Tammy	PZXJ8	2.20	3.50	2.00	0.00	2.20
Moore	Matthew	K2VIU	1.40	3.00	0.00	1.00	1.40
Sherman	Robert	FUR3X	1.30	0.00	2.00	2.50	1.30
Arellano	Kelsey	77KUY	3.00	3.00	4.00	1.00	3.00
Weaver	Harold	C9XKL	3.23	3.40	3.33	2.67	3.23

Lynch	Victoria	UFNZK	2.87	2.67	3.00	3.00	2.87
Jenkins	Laura	TH583	2.33	2.00	3.00	1.67	2.33
Garcia	Laura	U3D5E	2.83	4.00	1.33	3.50	2.83
Mcguire	Jonathan	ARWEB	3.10	3.50	3.00	2.50	3.10
Lewis	Theresa	P0JA5	4.00	4.00	4.00	4.00	4.00
Robbins	Kelly	N7TIV	1.90	0.00	3.00	3.50	1.90
Robinson	John	G6UPG	0.60	1.00	0.00	1.00	0.60
Lane	Gabriela	6KVU0	2.27	3.33	1.67	1.33	2.27
Benjamin	Melissa	CHM29	1.20	2.00	0.00	2.00	1.20
Robertson	Jeffery	K52E6	4.07	4.00	5.00	2.33	4.07
Daniel		U4K0S	2.97	3.33	2.75	2.67	2.97
Clark	Johnathan	G6G4D	2.67	3.33	3.33	0.00	2.67
Alexander	Darrell	ZTLSE	3.00	4.00	1.00	5.00	3.00
White	Marcia	0Z2LJ	0.80	2.00	0.00	0.00	0.80
Woods	Rebecca	2LVZE	2.53	3.33	2.50	1.00	2.53
Jacobson	Mark	SW1FA	2.80	4.00	3.00	0.00	2.80
Arias	Michelle	NQP88	0.20	0.00	0.00	1.00	0.20
Ramirez	Carlos	5PQAC	3.13	4.00	2.50	2.67	3.13
Jackson		92I2Y	0.80	0.00	0.00	4.00	0.80
Thompson	Amy	K3MXR	2.73	3.33	2.00	3.00	2.73
Ponce	Jermaine	0YU61	4.10	5.00	3.00	4.50	4.10
Luna	Rachel	8VI0V	1.97	0.00	3.67	2.50	1.97
Lee	Stephen	7QINW	2.80	5.00	1.00	2.00	2.80
Gonzales	Taylor	AWXDQ	2.37	2.00	2.33	3.17	2.37
Washington		XAY57	3.20	3.50	2.00	5.00	3.20
Olson	Charles	DRNO4	2.20	4.00	0.00	3.00	2.20
Reid	James	WW2NM	2.60	2.50	2.00	4.00	2.60
Todd	Anthony	3LLAJ	2.00	3.00	0.00	4.00	2.00
Vance	Gilbert	P35EW	1.40	1.00	1.00	3.00	1.40
Reed	Riley	UEAU3	3.07	3.67	2.50	3.00	3.07
Villa	Steven	DGX8H	0.80	2.00	0.00	0.00	0.80
Johnson	Doris	Z5WLW	3.80	4.00	5.00	1.00	3.80
Cantrell	Nicole	QWK5C	2.80	0.00	5.00	4.00	2.80
Wilson	David	GZ97S	2.33	2.50	2.33	2.00	2.33
Martin	William	DDZV9	2.32	4.00	0.00	3.60	2.32
Moreno	Brian	5P7C4	1.20	3.00	0.00	0.00	1.20
Anderson	Peter	AU687	2.23	1.33	2.00	4.50	2.23
Brooks	William	QWEC7	2.80	5.00	0.00	4.00	2.80
Schmitt	Clifford	AP5ZX	2.40	5.00	1.00	0.00	2.40
Moss	Maria	BL4U8	1.20	1.00	1.00	2.00	1.20
Potter	Jeffrey	MJUC1	2.30	3.00	1.00	3.50	2.30
Alvarez	Phillip	0HC1E	3.93	5.00	3.50	2.67	3.93
Terrell	Harry	BK9EY	2.20	2.00	3.00	1.00	2.20
Stewart	Scott	3O35F	2.50	2.33	2.75	2.33	2.50

Hunter	Tara	QR19G	2.20	0.00	4.00	3.00	2.20
Young	Joseph	WH1ZH	3.23	3.75	3.00	2.67	3.23
Smith	Charles	0WYR7	2.60	3.50	2.00	2.00	2.60
Gilbert	John	A8U7K	4.10	3.75	4.67	3.67	4.10
Williams	Christopher	61A69	2.80	2.50	3.00	3.00	2.80
Carlson	Jeffrey	CYGAE	2.50	1.00	3.00	4.50	2.50
Cox	Bonnie	3FLK5	2.50	1.75	4.50	0.00	2.50
Rios	Jerry	ORNM3	3.40	4.50	4.00	0.00	3.40
Brown	Betty	7W8YE	1.53	2.33	0.00	3.00	1.53
Quinn	Corey	CJZRT	3.68	3.20	4.50	3.00	3.68
Bauer	John	4I4WY	1.40	2.00	0.00	3.00	1.40
Dawson	Keith	6K1RV	2.60	3.50	2.00	2.00	2.60
Morris	Dakota	0QEPM	1.60	0.00	2.00	4.00	1.60
Gilbert	Melinda	LC3OK	2.27	2.67	2.00	2.00	2.27
Walker	Barbara	0OWRH	2.60	4.00	0.00	5.00	2.60
Reese	Chase	DI0C5	2.20	3.00	2.50	0.00	2.20
Rosario	Sara	4VDK3	3.53	4.67	2.33	3.67	3.53
Collier	Nichole	OFOQB	3.49	3.40	3.33	4.00	3.49
Nguyen	Allen	6EBHW	3.07	2.50	3.67	3.00	3.07
Wagner	Vanessa	0ZJZT	1.67	2.00	1.00	2.33	1.67
Sanchez	Amanda	JUDOH	2.77	3.67	2.00	2.50	2.77
Jackson	Nancy	9R01Y	2.60	1.00	4.00	3.00	2.60
Zuniga	Nicholas	YDZC3	0.00	0.00	0.00	0.00	0.00
Schaefer		VKCWC	1.97	2.67	0.00	4.50	1.97
Hobbs	Aaron	Y26NY	2.40	4.00	2.00	0.00	2.40
Rivera	William	69SJG	2.00	4.00	0.00	2.00	2.00
Cole	Lisa	I8U4Z	2.53	4.00	1.33	2.00	2.53
Thompson	Jake	67EYU	1.10	1.00	1.00	1.50	1.10
Howard	Keith	7WHJR	2.80	3.00	2.00	4.00	2.80
Vasquez		426K8	1.60	0.00	2.00	4.00	1.60
Bailey	Michelle	C9PS9	2.00	4.00	0.00	2.00	2.00
Wilkins	Haley	VWQZC	3.80	5.00	4.00	1.00	3.80
Anderson	Dawn	Y2ZFL	3.32	3.80	3.50	2.00	3.32
Holmes	Scott	6F0TV	1.90	1.00	2.00	3.50	1.90
Jimenez	James	G7ZYX	3.60	5.00	4.00	0.00	3.60
Melton	Russell	3S3MN	2.55	2.00	2.25	4.25	2.55
Frank	Daniel	T21O4	1.20	0.00	2.00	2.00	1.20
Anderson	Jerry	O83AN	3.00	3.00	3.00	3.00	3.00
Caldwell	Kristi	DAWJW	3.67	4.67	2.50	4.00	3.67
Lopez	Bruce	Y4RHZ	2.53	3.00	3.33	0.00	2.53
Martin		XZJXD	2.00	2.50	2.00	1.00	2.00
Mcgee	Richard	P4FIZ	0.40	0.00	0.00	2.00	0.40
Rivera	Natalie	NW0RD	3.80	5.00	3.50	2.00	3.80
Roberts		T02WF	1.60	4.00	0.00	0.00	1.60

Tate		WX9FX	1.27	0.00	2.67	1.00	1.27
King		K99E6	3.00	4.00	2.00	3.00	3.00
Santiago	Dawn	3K1ND	3.23	3.00	4.33	1.50	3.23
Lopez	Mary	8X3PV	3.67	1.67	5.00	5.00	3.67
Wood	Stacey	BJLLH	3.50	2.75	4.00	4.00	3.50
Swanson	Jaime	6P3VN	4.50	5.00	4.50	3.50	4.50
Bowen	Eric	P9Q6Y	2.00	5.00	0.00	0.00	2.00
Williams	Nicholas	G60H0	2.30	5.00	0.00	1.50	2.30
Mendez	Bradley	DW4SG	3.13	3.33	3.00	3.00	3.13
Hardy		HQSNA	2.98	3.50	3.33	1.25	2.98
Ward	Danielle	TT1MJ	3.40	1.00	5.00	5.00	3.40
Jones	Joseph	QMNGC	3.00	3.00	3.00	3.00	3.00
Velazquez	Thomas	SZXQH	2.40	3.50	1.00	3.00	2.40
Chapman	Gina	HYR8F	3.37	3.50	3.67	2.50	3.37
Johnson	Cathy	EJ2DW	2.60	2.00	2.50	4.00	2.60
Burgess		U29GK	2.92	2.67	3.00	3.25	2.92
Martinez	Richard	GLVQG	1.67	0.00	3.00	2.33	1.67
Ramirez	Kevin	P8UM4	2.53	2.00	2.33	4.00	2.53
Nguyen	Kristina	3XOCG	2.20	3.00	0.00	5.00	2.20
Flowers	Michael	BQ74R	2.73	2.67	3.00	2.33	2.73
Proctor	Tyrone	BSJMW	2.90	3.00	1.75	5.00	2.90
Smith	Carlos	6LV2R	3.13	4.00	3.00	1.67	3.13
Harrington	Jessica	SHKRM	3.20	5.00	2.50	1.00	3.20
Armstrong	Walter	WPI4A	2.60	4.00	1.50	2.00	2.60
Garcia	Kristina	GPYLB	2.60	4.00	2.50	0.00	2.60
Hall	Gerald	R5OOD	3.02	4.00	2.25	2.60	3.02
Thompson	Lisa	QR035	0.40	0.00	0.00	2.00	0.40
Oneill	Bobby	19J34	1.60	1.50	1.00	3.00	1.60
Cabrera	James	C78AR	3.20	2.00	3.50	5.00	3.20
House	Angela	WDR82	3.75	4.75	3.00	3.25	3.75
Scott		C8HL5	3.27	4.00	2.67	3.00	3.27
Lee	Jose	3M1YI	3.20	5.00	2.00	2.00	3.20
Tucker	Jennifer	TGD2Z	0.00	0.00	0.00	0.00	0.00
Maddox	Stephen	RYVDX	2.40	1.00	3.50	3.00	2.40
Riley	Karen	RVZRR	3.07	3.00	3.00	3.33	3.07
Anderson	Stephen	4Z5VC	1.45	2.50	0.00	2.25	1.45
Brewer	Paul	08WHX	1.20	3.00	0.00	0.00	1.20
Olson	Andrew	4UMXE	3.00	3.00	4.00	1.00	3.00
Clark	Brian	1XG6O	1.60	2.00	0.00	4.00	1.60
Hernandez	Mindy	7CIPO	3.73	4.50	4.00	1.67	3.73

(492 rows)

-- K --

-- Query against view:

SELECT seller_id, overall

FROM interchange.RatedSellers

WHERE overall >= 4.5;

seller_id | overall

-----+-----

36SYH | 4.55

E189I | 4.60

6P3VN | 4.50

(3 rows)

EXPLAIN ANALYSE SELECT seller_id, overall

FROM interchange.RatedSellers

WHERE overall >= 4.5;

QUERY PLAN

Subquery Scan on ratedsellers (cost=156.15..201.65 rows=350 width=44) (actual time=1.658..1.827 rows=3 loops=1)

-> HashAggregate (cost=156.15..198.15 rows=350 width=144) (actual time=1.658..1.827 rows=3 loops=1)
Group Key: s.user_id, u.first_name, u.last_name
Filter: ((((((0.4 * COALESCE(avg(r.quality), '0'::numeric)) + (0.4 * COALESCE(avg(r.pricing), '0'::numeric))) + (0.2 * COALESCE(avg(r.delivery), '0'::numeric))))::numeric(3,2) >= 4.5)

Batches: 1 Memory Usage: 321kB

Rows Removed by Filter: 489

-> Hash Join (cost=110.36..140.40 rows=1050 width=108) (actual time=0.402..1.029 rows=2127 loops=1)

Hash Cond: (s.user_id = u.user_id)

-> Hash Join (cost=27.55..54.82 rows=1050 width=76) (actual time=0.063..0.425 rows=2127 loops=1)

Hash Cond: (r.seller_id = s.user_id)

-> Seq Scan on ratings r (cost=0.00..24.50 rows=1050 width=44) (actual time=0.003..0.075 rows=2127 loops=1)

-> Hash (cost=17.80..17.80 rows=780 width=32) (actual time=0.059..0.059 rows=504 loops=1)

Buckets: 1024 Batches: 1 Memory Usage: 27kB

-> Seq Scan on sellers s (cost=0.00..17.80 rows=780 width=32) (actual time=0.001..0.027 rows=504 loops=1)

-> Hash (cost=66.25..66.25 rows=1325 width=96) (actual time=0.338..0.338 rows=2000 loops=1)

Buckets: 2048 Batches: 1 Memory Usage: 117kB

-> Seq Scan on users u (cost=0.00..66.25 rows=1325 width=96) (actual time=0.001..0.145 rows=2000 loops=1)

Planning Time: 0.086 ms

Execution Time: 1.841 ms

(19 rows)

-- Planning Time: 1.291 ms

-- Execution Time: 8.626 ms

-- Index DDL:

```
CREATE INDEX seller_rating_idx ON interchange.sellers(overall_rating);
```

```
CREATE INDEX
```

-- Query against materialized data:

```
SELECT user_id AS seller_id, overall_rating AS overall
```

```
FROM interchange.sellers
```

```
WHERE sellers.overall_rating >= 4.5;
```

```
seller_id | overall
```

```
-----+-----
```

```
36SYH   | 4.55
```

```
E189I   | 4.60
```

```
6P3VN   | 4.50
```

(3 rows)

```
EXPLAIN ANALYSE SELECT user_id AS seller_id, overall_rating AS overall
```

```
FROM interchange.sellers
```

```
WHERE sellers.overall_rating >= 4.5;
```

QUERY PLAN

Seq Scan on sellers (cost=0.00..15.30 rows=168 width=44) (actual time=0.020..0.038 rows=3 loops=1)

Filter: (overall_rating >= 4.5)

Rows Removed by Filter: 501

Planning Time: 0.007 ms

Execution Time: 0.040 ms

(5 rows)

-- Planning Time: 0.107 ms

-- Execution Time: 0.057 ms

-- The execution times are listed above. With the index on the rating field, we should see a significant improvement in query performance, especially as the database grows to have many more sellers.

-- We can see that, using indexes can improve query performance and make it easier to analyze data in a database.

----- L

```
SELECT COALESCE(category, 'ALL') AS category,
```

```
       COALESCE(plan, 'ALL') AS plan,
```

```
       COUNT(*) AS num_ads
```

```
FROM interchange.ads a
```

```
JOIN interchange.items i ON a.item_id = i.item_id
```

```

WHERE plan IN ('platinum', 'gold', 'silver')
      AND category NOT LIKE '%&%'
      AND category NOT LIKE 'Others'
GROUP BY ROLLUP (category, plan)
ORDER BY num_ads DESC;

```

category	plan	num_ads
ALL	ALL	1038
Pet Supplies	ALL	353
Office Products	ALL	346
Electronics	ALL	339
Pet Supplies	platinum	127
Pet Supplies	gold	125
Electronics	silver	124
Office Products	silver	123
Electronics	platinum	114
Office Products	gold	113
Office Products	platinum	110
Electronics	gold	101
Pet Supplies	silver	101

(13 rows)

----- M

-- Limit-based query:

```

SELECT email, state, count(category) AS num_interests
FROM (
  SELECT email, state, UNNEST(string_to_array(categories, ';')) AS category
  FROM interchange.users
) AS user_categories
WHERE state = 'California'
group by email, state
ORDER BY num_interests DESC
LIMIT 1;

```

email	state	num_interests
arellanothe42@gmail.com	California	10

(1 row)

-- Ranking-based query:

```

WITH user_interests AS (
  SELECT user_id, COUNT(*) AS interest_count
  FROM interchange.users
  CROSS JOIN UNNEST(string_to_array(categories, ';')) AS category
  WHERE state = 'California'
  GROUP BY user_id

```

```

),
ranked_users AS (
  SELECT user_id, DENSE_RANK() OVER (ORDER BY interest_count DESC NULLS LAST) AS rank
  FROM user_interests
)
SELECT u.email, r.rank
FROM interchange.users u
JOIN ranked_users r ON u.user_id = r.user_id
WHERE u.state = 'California' AND r.rank = 1;

```

```

      email      | rank

```

```

-----+-----

```

```

03505gutierrez\_Jody@gmail.com | 1
henry.luis24@gmail.com      | 1
jordan41383@hotmail.com    | 1
arellanothe42@gmail.com    | 1
roy6311@gmail.com          | 1

```

(5 rows)