

11/23/2018

SWISH

Adam McKinlay

C0656685

F18, W19

Adam Mckinlay
SWISH

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Requirements Analysis

Overview

SWISH

Description:

SWISH is a global leading seller of electric can openers. Selling only high quality can openers that offer exquisite craftsmanship and ingenious innovative design. At SWISH, we test every product to ensure the product's quality, user friendly, innovative, and safe, ensuring a memorable experience with your can opener. Much like your phone, a can opener is a tool, you wouldn't want a faulty phone. Which is why we take such pride in our services, offering an extended year warranty on top of the manufactures, our way of saying thankyou for letting our products into your home and welcoming you to the extended SWISH family.

History:

Our story is unlike most, dating back to the 1860's. It was a few years after the first can opener was created in the United States. When word spread to the great white north, Alexander McKinlay could not help but take notice. A craftsman in can openers. His eye for intricate detail and their mechanics helped lead him to the most efficiently designed can openers. He would acquire the can openers, running extensive test to prove their worth. Once proved, he would walk around his home town, selling door to door. Alexander McKinlay's eye for detail has carried over for over the past century. Testing the designs to their limitations, using advance technology to determine quality, and only selling the best to our customers. A lot has changed over the past century, but our guarantee remains intact, Quality, Dedication, Family. Values that we have carried with us for the past 100 years, values we will carry for the next 100.

Product Attributes:

The can openers in which we offer contain various types of descriptions to describe and provide more detail to our customers. The products attributes are as follows: Product ID, Brand, Model, Color, Warranty, Length, Width, Height, Shipping Weight, Primary Material, Cord Storage, Knife Sharpener, Auto Shutoff, Dish Washer Safe, and Unit Price. Below are two examples of how we utilize attributes.

Product: Black & Decker 2-in-1 Can Opener

- **Product ID: 102 -> UID**
- Brand: BLACK+DECKER
- Model: CO450W
- Color: White
- Warranty: 2 Years
- Length: 13.3
- Width: 15.2
- Height: 26
- Shipping weight: 1.1kg
- Primary material: Plastic
- Cord Storage: Yes
- Knife Sharpener: Yes
- Auto Shutoff: Yes
- Dish Washer Safe: Yes
- Unit Price: \$14.99

Product: Black & Decker 2-in-1 Can Opener

- **Product ID: 103 -> UID**
- Brand: BLACK+DECKER
- Model: CO450B
- Color: Black
- Warranty: 2 Years
- Length: 13.3
- Width: 15.2
- Height: 26
- Shipping Weight: 1.1 Kg
- Primary Material: Plastic
- Cord Storage: Yes
- Knife Sharpener: Yes
- Auto Shutoff: Yes
- Dishwasher Safe Parts: Yes
- Price: 14.99

Resources:

[Wayfiar](#), [Amazon](#), [Black and Decker](#)

Sales Invoices

SALES INVOICE

SWISH
1457 London Rd,
Sarnia, ON N7S 6K4
(226)-932-1799
sales@swish.ca

SWISH

ORDER

Order Number: 002
Order Date: 10/01/18
Associate ID: 58926

INVOICE TO:

Customer Company: Canadian Tire
Customer Name: Penny Sherman
Customer ID: 1528976
Customer Address: Lambton Mall Road, 1380 London Rd
Customer City: Sarnia, ON N7S 1P8
Customer Phone: (519) 542-3403

Brand	Model	Color	Warranty	Primary Material	Dimensions	Shipping Weight	Quantity	Unit Price	Price
BLACK+DECKER	CO450W	White	2 Years	Plastic	13.3 x 15.2 x 26cm	1.1Kg	102	\$14.99	\$1,528.92
BLACK+DECKER	CO450B	Black	2 Years	Plastic	13.3 x 15.2 x 26cm	1.1Kg	92	\$14.99	\$1,379.08
BLACK+DECKER	EC500W	Black	2 years	Plastic	15.75 x 15.24 x 25.91cm	N/A	52	\$12.99	\$675.84
BLACK+DECKER	EC500B	White	2 years	Plastic	15.75 x 15.24 x 25.91cm	N/A	26	\$12.99	\$337.74
BLACK+DECKER	CO100B	Black	2 years	Plastic	23.33 x 13.97 x 21.08cm	1.41Kg	34	\$39.99	\$1,359.66

Sub-total: \$5,281.24

Tax: \$686.56

Invoice Total: \$5,967.80

This invoice must be paid within **30 days** of invoice date.

Contact sales@swish.ca for more information to follow up, or call us at (226)-932-1799.

SALES INVOICE

SWISH

1457 London Rd,
Sarnia, ON N7S 6K4
(226)-932-1799
sales@swish.ca

SWISH

ORDER

Order Number: 002
Order Date: 10/22/18
Associate ID: 998

INVOICE TO:

Customer Company: Walmart Sarnia Supercenter
Customer Name: Allison Wright
Customer ID: 152898
Customer Address: 444 Quinn Dr.
Customer City: Sarnia, ON N7S 6M8
Customer Phone: (519) 542-4272

Brand	Model	Color	Warranty	Primary Material	Dimensions	Shipping Weight	Quantity	Unit Price	Price
BLACK+DECKER	CO450W	White	2 Years	Plastic	13.3 x 15.2 x 26cm	1.1Kg	102	\$14.99	\$1,528.92
Hamilton Beach	76607C	White	5 Years	Plastic & Chrome	14.9 X 27.3 X 15.6	1.6Kg	42	\$52.99	\$2,225.58
Cuisinart	CC050NC	Red	3 years	Plastic	14.6 X 14.6 X 27	1.1	38	\$38.99	\$1,481.62
Hamilton Beach	76606ZA	Black	1 years	Plastic & Chrome	11.9 X 12.7 X 25.9	1.6	39	\$56.99	\$2,222.61

Sub-total: \$7,458.73**Tax:** \$969.63**Invoice Total:** \$8,428.36

This invoice must be paid within **30 days** of invoice date.

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SALES INVOICE

SWISH

1457 London Rd,
Sarnia, ON N7S 6K4
(226)-932-1799
sales@swish.ca

SWISH

ORDER

Order Number: 002
Order Date: 10/22/18
Associate ID: 996

INVOICE TO:

Customer Company: Tepperman's Sarnia
Customer Name: Joe Smith
Customer ID: 1528979
Customer Address: 1249 London Rd
Customer City: Sarnia, ON N7S 4T3
Customer Phone: (519) 541-0100

Brand	Model	Color	Warranty	Primary Material	Dimensions	Shipping Weight	Quantity	Unit Price	Price
Hamilton Beach	76388R	Red	5 Years	Plastic	25.4 X 14 X 14	0.975	47	\$63.99	\$3,007.53
Hamilton Beach	76607C	White	5 Years	Plastic & Chrome	14.9 X 27.3 X 15.6	1.6Kg	33	\$52.99	\$1,748.67
Cuisinart	CC050NC	Red	3 years	Plastic	16.6 X 14.6 X 27	1.1	21	\$38.99	\$818.79
Cuisinart	SC0-60C	Grey	3 years	Stainless Steel	14.6 X 15.2 X 27.3	1.9	35	\$49.99	\$1,749.65

Sub-total: \$7,324.64**Tax:** \$952.20**Invoice Total:** \$8,276.84

This invoice must be paid within **30 days** of invoice date.

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SALES INVOICE

SWISH
 1457 London Rd,
 Sarnia, ON N7S 6K4
 (226)-932-1799
 sales@swish.ca



ORDER

Order Number: 002
 Order Date: 10/22/18
 Associate ID: 998

INVOICE TO:

Customer Company: Real Canadian Superstore
 Customer Name: Dylan Sanders
 Customer ID: 1528980
 Customer Address: 600 Murphy Rd
 Customer City: Sarnia, ON N7S 2X1
 Customer Phone: (519) 383-8300

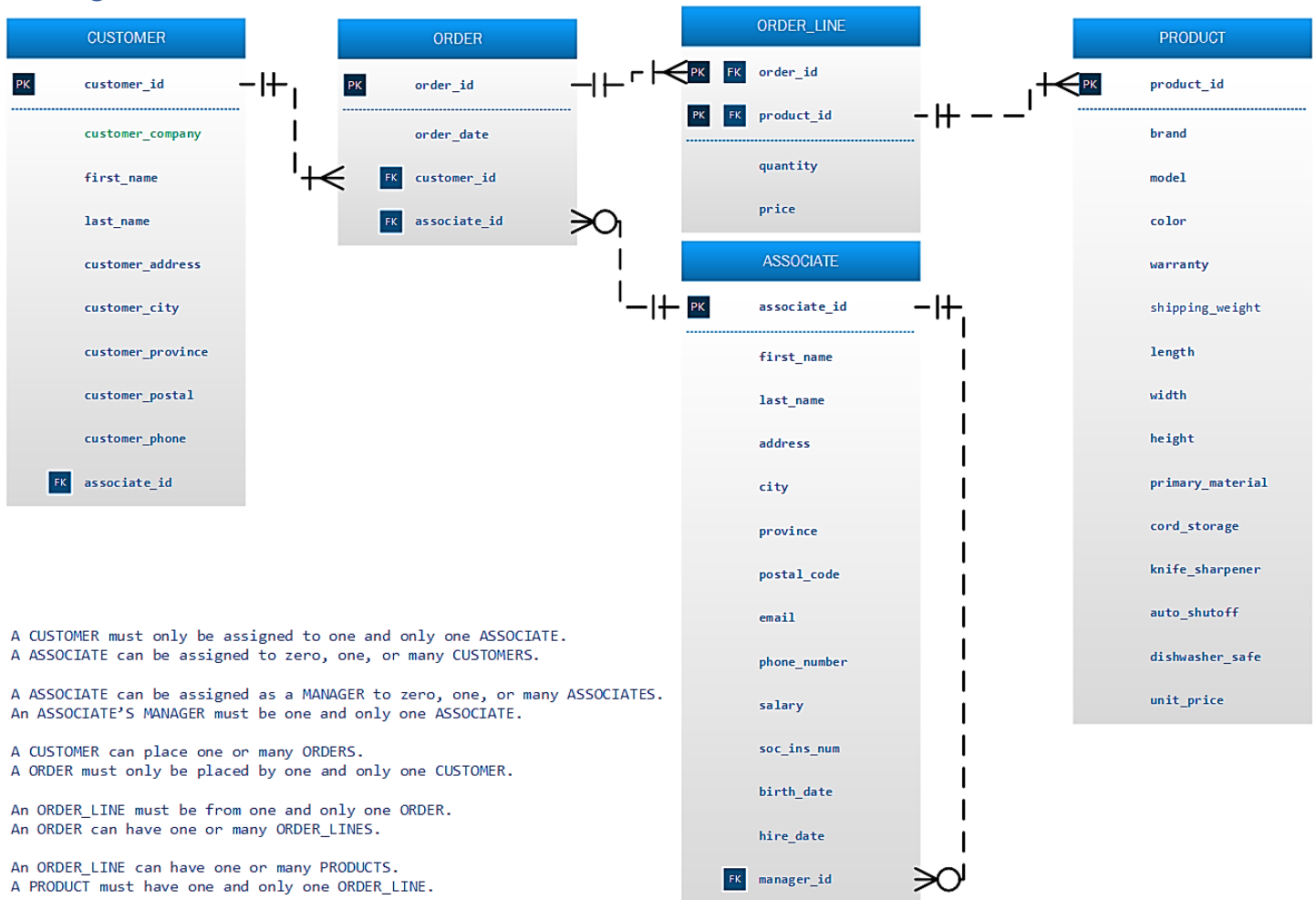
Brand	Model	Color	Warranty	Primary Material	Dimensions	Shipping Weight	Quantity	Unit Price	Price
BLACK+DECKER	CO450W	White	2 Years	Plastic	13.3 x 15.2 x 26cm	1.1Kg	42	\$14.99	\$629.58
Hamilton Beach	76607C	White	5 Years	Plastic & Chrome	14.9 X 27.3 X 15.6	1.6Kg	28	\$52.99	\$1,483.72
Hamilton Beach	76388R	Red	5 years	Plastic	25.4 X 14 X 14	0.957	17	\$63.99	\$1,087.83
Hamilton Beach	76606ZA	Black	1 years	Plastic & Chrome	14.6 X 14.6 X 27	1.1	36	\$56.99	\$2,051.64
Cuisinart	SC0-60C	Grey	3 years	Stainless Steel	23.33 x 13.97 x 21.08cm	1.41Kg	37	\$44.99	\$1,664.63
								Sub-total:	\$6,971.40
								Tax:	\$899.26
								Invoice Total:	\$7,816.66

This invoice must be paid within **30 days** of invoice date.

Contact sales@swish.ca for more information to follow up, or call us at (226)-932-1799.

Entity Relationship Diagram

Diagram



Normalization

3NF

ORDERS			
<u>order id</u>	order_date	<u>customer id</u>	<u>associate id</u>
002	10/15/2018	1528976	
003	10/16/2018	1528978	
004	10/17/2018	1528979	
005	10/18/2018	1528980	
006	10/19/2018	1528981	

ORDER_LINES			
<u>order id</u>	<u>product id</u>	quantity	price
002	1501	102	
002	1502	92	
002	1503	52	
002	1504	26	
002	1505	34	
003	1401	39	
003	1301	40	
003	1505	55	
004	1408	72	
004	1301	34	
005	1502	87	
005	1408	28	
005	1409	47	
005	1505	39	
006	1401	62	
006	1303	64	
006	1305	12	
006	1504	25	
006	1505	26	

[illegible]

CUSTOMERS									
customer_id	customer_company	first_name	last_name	customer_address	customer_city	customer_province	postal	phone	associate_id
152001	Canadian Tire	Penny	Sherman	1380 Lambton Mall Road	Sarnia	ON	N7S1P8	5195423403	998
152002	Walmart Sarnia Supercenter	Allison	Wright	444 Quinn Dr	Sarnia	ON	N7S6M8	5195424272	997
152003	Teppermans	Joe	Smith	1249 London Rd	Sarnia	ON	N7S4T3	5195410100	996
152004	Metro	Dylan	Sander	1375 London Rd	Sarnia	ON	N7S1P6	5195421433	995
152005	Staples Sarnia	Jerry	Simmonds	1379 London Rd Unit 2	Sarnia	ON	N7S1P6	5195424461	994
152006	Sarnia Home Hardware	Jeremiah	Olsen	120 Russell St N	Sarnia	ON	N7T6R2	5193830688	998
152007	Michaels	Coral	Wynn	1470 Quinn Dr	Sarnia	ON	N7S6M8	5195423200	992
152008	TJs Furniture & Home Decor	Allana	Delaney	1644 London Line	Sarnia	ON	N7W1B2	5195412323	991
152009	Lowes Home Improvemen	Kelis	Bostock	1390 Quinn Dr	Sarnia	ON	N7S6M8	5195412120	990
152010	Teahen Home Hardware Building Centre	Don	Foster	1272 London Rd	Sarnia	ON	N7S1P5	5193373783	989
152011	Best Buy	Presley	Clarke	600 Murphy Rd	Sarnia	ON	N7S2X1	5193838300	996
152012	1380 Exmouth St	Danniella	Laing	600 Murphy Rd	Sarnia	ON	N7S3X9	5195424388	987
152013	Real Canadian Superstore	Dylan	Sander	600 Murphy Rd	Sarnia	ON	N7S2X1	5193838300	996
152014	Leons	Jane	Smith	1000 Barclay Dr	Sarnia	ON	N7S6M6	5195426560	986

ASSOCIATES													
associate_id	first_name	last_name	address	city	province	postal_code	email	phone_number	salary	soc_ins_num	birth_date	hire_date	manager_id
999	Adam	Mckinaly	1524 Lookout Drive	Sarnia	ON	N6L2P8	amckinlay@lookout.ca	5198748658	60.89	257946321	1988-05-27	2006-04-08	null
998	Jane	McDonald	645 Mars Rd	Sarnia	ON	B2F2L6	jane_smith772@gmail.com	5193326465	60.89	546782945	1986-03-20	2010-01-20	null
997	Mila	Galvan	7825 Michigan Ave	Sarnia	ON	N5P6P4	jjsmitt64@gmail.com	2269728857	60.89	404019245	1982-07-12	2015-01-10	null
996	Jayda	Whitmore	2171 Carson Street	Wallaceburg	ON	J8B0R2	mrsam@me.com	2269727458	60.89	573044976	1988-10-12	2006-01-11	null
995	Yusef	Wood	3414 Polk Street	Sarnia	ON	V4V0P7	yamla@optonline.net	2269721764	42.72	107539821	1989-04-16	2006-07-26	999
994	Roger	Parker	1551 West Fork Drive	Sarnia	ON	J0E2B2	jtorkbob@msn.com	2269723496	42.72	377699743	1994-12-12	2003-08-30	998
993	Adam	Munoz	2245 Breezewood Court	Sombra	ON	L0N0Y3	klaudon@gmail.com	2269727788	42.72	337330211	1979-12-24	2002-01-24	997
992	Helin	Sheridan	1774 Highland View Drive	Sarnia	ON	N5H0E2	jimxugle@yahoo.ca	2269729258	42.72	346911839	1994-07-05	2011-06-13	996
991	Jessie	Gilliam	3644 Twin Willow Lane	Brigden	ON	A1Y2Y7	matsn@yahoo.ca	2269726565	42.72	283208000	1990-04-29	2012-10-17	998
990	Asher	Callahan	2569 Comfort Court	Sarnia	ON	P8N0G0	wkrebs@gmail.com	2269727425	42.72	818522953	1971-03-16	2013-03-05	997
989	Jillian	Summer	2826 Aspen Court	Sarnia	ON	N0L3H2	pgolle@live.com	2269729647	42.72	619733383	1977-01-20	2013-02-25	996
988	Enrico	Cox	2386 Stanley Avenue	Wallaceburg	ON	N8A2W7	dougj@msn.com	2269727410	42.72	407816802	1987-06-15	2008-12-31	998

987	Isadora	Russell	202 Oliverio Drive	Brigden	ON	A2B1K2	qmacro@outlook.com	2269720258	42.72	654946679	1981-02-01	2002-09-29	997
986	Luc	Mccarty	2929 Perry Street	Brights Grove	ON	N0J1Z9	mhanoh@icloud.com	2269729630	32.72	759602356	1994-01-02	2015-04-18	996
985	Cobie	Mccabe	471 Rose Street	Sarnia	ON	H9J2J9	murty@msn.com	2269727613	32.72	423771299	1986-08-14	2005-06-02	996
984	Alysha	Iles	2680 Clousson Road	Wallaceburg	ON	N7A2W5	bmidd@yahoo.com	2269723167	32.72	667600059	1977-11-22	2005-10-07	997
983	Cherry	Chamberlain	1172 Fowler Avenue	Sarnia	ON	G3E1E8	specprog@att.net	2269728462	32.72	881785785	1975-04-06	2013-12-07	998
982	Atlanta	Warren	3611 Buck Drive	Sarnia	ON	J2N1R5	dieman@hotmail.com	2269727531	32.72	601419924	1979-07-19	2017-07-07	999
981	Mitchel	Mcfarland	934 Stone Lane	Brights Grove	ON	E3V2T3	kalpol@live.com	2269721357	32.72	491328475	1991-05-12	2018-05-15	998
980	Brittany	Ray	626 Hurry Street	Wallaceburg	ON	N4B4W7	amcuri@outlook.com	2269729921	15.29	905232401	1984-07-12	2018-04-15	997
979	Griffin	Charlton	2818 Meadow Lane	Sarnia	ON	T9C2E5	jesse@icloud.com	2269721985	15.29	132937705	1995-12-02	2012-02-21	996
978	Frank	Herbert	2126 Traders Alley	Brights Grove	ON	S4H0L6	okroeger@verizon.net	2269721875	15.29	482808494	1982-07-12	2008-06-01	996
977	Umair	Ferreira	1338 Emerson Road	Sombra	ON	T7S0Y9	oracle@verizon.net	2269727020	15.29	192911999	1990-04-16	2007-11-30	997
976	Milly	Giles	4736 Hedge Street	Brigden	ON	V8B2Z9	hedwig@me.com	2269727182	15.29	192912999	1992-07-09	2018-10-26	998
975	McKayla	Tanner	865 Indian Rd	Sarnia	ON	N6W8F2	mccTanner82@hotmail.com	2269127788	15.29	610973782	1980-10-03	2018-06-16	999

Relationship Schema

Physical Model

Table Model

CUSTOMRES				
Key Type	Optionality	Column Name	Data Type	Length
pk	*	customer_id	NUMERIC	(9,0)
uk	*	customer_company	VARCHAR	(80)
	*	customer_first_name	VARCHAR	(50)
	*	customer_last_name	VARCHAR	(50)
	*	customer_address	VARCHAR	(120)
	*	customer_city	VARCHAR	(80)
	*	customer_province	VARCHAR	(2)
	*	customer_postal	VARCHAR	(6)
	*	customer_phone	NUMERIC	(11,0)
fk	*	associate_id	NUMERIC	

PRODUCTS				
Key Type	Optionality	Column Name	Data Type	Length
pk	*	product_id	NUMERIC	(4,0)
	*	brand	VARCHAR	(50)
	*	model	VARCHAR	(10)
	*	color	VARCHAR	(10)
	*	warranty_years	NUMERIC	(1,0)
	o	shipping_weight	DECIMAL	(4,2)
	*	length	NUMERIC	
	*	width	NUMERIC	
	*	height	NUMERIC	
	*	primary_material	VARCHAR	(40)
	o	cord_storage	NUMERIC	(1,0)
	o	knife_sharpener	NUMERIC	(1,0)
	o	auto_shutoff	NUMERIC	(1,0)
	o	dishwasher_safe	NUMERIC	(1,0)
	*	unit_price	DECIMAL	(5,2)

ORDRES				
Key Type	Optionality	Column Name	Data Type	Length
pk	*	order_id	NUMERIC	(3,0)
fk	*	customer_id	NUMERIC	(9,0)
fk	*	associate_id	NUMERIC	
	*	order_date	DATE	

ORDER_LINES				
Key Type	Optionality	Column Name	Data Type	Length
pk/fk	*	order_id	NUMERIC	(3,0)
pk/fk	*	product_id	NUMERIC	(4,0)
	*	quantity	NUMERIC	(3,0)
	*	price	NUMERIC	

ASSOCIATES				
Key Type	Optionality	Column Name	Data Type	Length
pk	*	associate_id	NUMERIC	
	*	first_name	VARCHAR	
	*	last_name	VARCHAR	
	*	address	VARCHAR	
	*	city	VARCHAR	
	*	province	VARCHAR	
	*	postal_code	VARCHAR	
	*	email	VARCHAR	
	*	phone_number	NUMERIC	
	*	salary	DECIMAL	
	*	soc_ins_num	NUMERIC	
	*	birth_date	DATE	
	*	hire_date	DATE	
fk	*	manager_id	NUMERIC	

Database Creation

/*Adam McKinaly -- Nov 2, 2018*/

```

-----
--                                Create Tables
-----

CREATE TABLE associates
(associate_id      NUMERIC          (3,0)      NOT NULL,
 first_name        VARCHAR          (50)        NOT NULL,
 last_name         VARCHAR          (50)        NOT NULL,
 address           VARCHAR          (100)       NOT NULL,
 city              VARCHAR          (50)        NOT NULL,
 province          VARCHAR          (2)         NOT NULL,
 postal_code       VARCHAR          (6)         NOT NULL,
 email             VARCHAR          (80),
 phone_num         NUMERIC          (10,0)      NOT NULL,
 salary            DECIMAL          (4,2)       NOT NULL,
 soc_ins_num       NUMERIC          (9)         NOT NULL,
 start_date        DATE              NOT NULL,
 manager_id        NUMERIC          (3,0));

CREATE TABLE customers
(customer_id       NUMERIC          (6,0)       NOT NULL,
 customer_company  VARCHAR          (80)        NOT NULL,
 customer_first_name VARCHAR        (50)        NOT NULL,
 customer_last_name VARCHAR        (50)        NOT NULL,
 customer_address  VARCHAR          (120)       NOT NULL,
 customer_city     VARCHAR          (80)        NOT NULL,
 customer_province VARCHAR          (2)         NOT NULL,
 customer_postal   VARCHAR          (6)         NOT NULL,
 customer_phone    NUMERIC          (11,0)      NOT NULL,
 associate_id      NUMERIC          (3,0)       NOT NULL);

CREATE TABLE products
(product_id        NUMERIC          (4,0)       NOT NULL,
 brand             VARCHAR          (50)        NOT NULL,
 model             VARCHAR          (10)        NOT NULL,
 color             VARCHAR          (10)        NOT NULL,
 warrenty_years    NUMERIC          (1,0)       NOT NULL,
 shipping_wieght   DECIMAL          (4,2),
 primary_material  VARCHAR          (40)        NOT NULL,
 cord_storage      NUMERIC          (1,0),
 knife_sharpener   NUMERIC          (1,0),
 auto_shutoff      NUMERIC          (1,0),
 dishwasher_safe   NUMERIC          (1,0),
 unit_price        DECIMAL          (5,2)       NOT NULL);

CREATE TABLE orders
(order_id          NUMERIC          (3,0)       NOT NULL,
 customer_id       NUMERIC          (6,0)       NOT NULL,

```



```

associate_id      NUMERIC      (3,0)      NOT NULL,
order_date        DATE);

```

```

CREATE TABLE order_lines
(order_id          NUMERIC      (3,0)      NOT NULL,
product_id        NUMERIC      (4,0)      NOT NULL,
quantity          NUMERIC      (3,0)      NOT NULL,
unit_price        DECIMAL      (5,2)      NOT NULL);

```

```

-----
--                                Create Primary Keys
-----

```

```

ALTER TABLE associates
  ADD CONSTRAINT associates_associate_id_pk
  PRIMARY KEY (associate_id);

```

```

ALTER TABLE customers
  ADD CONSTRAINT customers_customer_id_pk
  PRIMARY KEY (customer_id);

```

```

ALTER TABLE products
  ADD CONSTRAINT products_product_id_pk
  PRIMARY KEY (product_id);

```

```

ALTER TABLE orders
  ADD CONSTRAINT orders_order_id_pk
  PRIMARY KEY (order_id);

```

```

ALTER TABLE order_lines
  ADD CONSTRAINT order_lines_pks
  PRIMARY KEY (order_id, product_id);

```

```

-----
--                                Create Unique Keys
-----

```

```

ALTER TABLE associates
  ADD CONSTRAINT associates_soc_ins_num_uk
  UNIQUE (soc_ins_num);

```

```

ALTER TABLE customers
  ADD CONSTRAINT customers_company_name_uk
  UNIQUE (customer_company);

```

```
-----
--                                Create Foreign Keys
-----
```

```
ALTER TABLE associates
  ADD CONSTRAINT associates_manager_id_fk
    FOREIGN KEY(manager_id)
    REFERENCES associates (associate_id);
```

```
ALTER TABLE customers
  ADD CONSTRAINT customers_associate_id_fk
    FOREIGN KEY(associate_id)
    REFERENCES associates (associate_id);
```

```
/*Orders Foreign Keys*/
ALTER TABLE orders
  ADD CONSTRAINT orders_associate_id_fk
    FOREIGN KEY (associate_id)
    REFERENCES associates (associate_id);
```

```
ALTER TABLE orders
  ADD CONSTRAINT orders_customer_id_fk
    FOREIGN KEY (customer_id)
    REFERENCES customers (customer_id);
```

```
/*Order Lines Foreign Keys*/
ALTER TABLE order_lines
  ADD CONSTRAINT order_lines_order_id_fk
    FOREIGN KEY (order_id)
    REFERENCES orders (order_id);
```

```
ALTER TABLE order_lines
  ADD CONSTRAINT order_lines_product_id_fk
    FOREIGN KEY (product_id)
    REFERENCES products (product_id);
```

```
-----
--                                Create Inserts
-----
```

```
INSERT INTO associates VALUES
(999, 'Adam', 'Mckinaly', '1524 Lookout Drive', 'Sarnia', 'ON', 'N6L2P8',
'amckinlay@lookout.ca', 5198748658, 60.89, 257946321, '2004-04-08',null),
(998, 'Jane', 'McDonald', '645 Mars Rd', 'Sarnia', 'ON', 'B2F2L6',
'jane_smith772@gmail.com', 5193326465, 45.92, 546782945, '2010-01-20',999),
(997, 'Joe', 'Smitt', '7825 Michigan Ave', 'Sarnia', 'ON', 'N5P6P4',
'jjsmitt64@gmail.com', 2269726485, 15.29, 789654789, '2015-01-10',998),
(996, 'McKayla', 'Tanner', '865 Indian Rd', 'Sarnia', 'ON', 'N6W8F2',
'mccTanner82@hotmail.com', 2269127788, 26.99, 610973782, '2018-06-16',999);
```

```
/*Insert to Customers*/
```

```
INSERT INTO customers VALUES
```

```
(152896, 'Canadian Tire', 'Penny', 'Sherman', '1380 Lambton Mall Road', 'Sarnia',  
'ON', 'N7S1P8', 5195423403, 999),  
(152898, 'Walmart Sarnia Supercenter', 'Allison', 'Wright', '444 Quinn Dr',  
'Sarnia', 'ON', 'N7S6M8', 5195424272, 998),  
(152899, 'Teppermans', 'Joe', 'Smith', '1249 London Rd', 'Sarnia', 'ON',  
'N7S4T3', 5195410100, 997),  
(152890, 'Real Canadian Superstore', 'Dylan', 'Sander', '600 Murphy Rd',  
'Sarnia', 'ON', 'N7S2X1', 5193838300, 996),  
(152891, 'Leons', 'Jane', 'Smith', '1000 Barclay Dr', 'Sarnia', 'ON', 'N7S6M6',  
5195426560, 999);
```

```
/*Insert for Products*/
```

```
INSERT INTO products VALUES
```

```
(1501, 'Black and Decker', 'C0450W', 'White', 2, 1.1, 'Plastic', 1, 1, 1, 1,  
14.99),  
(1502, 'Black and Decker', 'C0450B', 'Black', 2, 1.1, 'Plastic', 1, 1, 1, 1,  
14.99),  
(1503, 'Black and Decker', 'EC500W', 'White', 2, NULL, 'Plastic', 1, 1, 1, 0,  
12.99),  
(1504, 'Black and Decker', 'EC500B', 'Black', 2, NULL, 'Plastic', 1, 1, 1, 0,  
12.99),  
(1505, 'Black and Decker', 'C0100B', 'Black', 2, 1.41, 'Plastic', 1, 1, 1, 1,  
39.99),  
(1401, 'Hamilton Beach', '76607C', 'White', 5, 1.6, 'Plastic & Chrome', 0, 0, 0,  
0, 52.99),  
(1301, 'Cuisinart', 'CC0-50NC', 'Red', 3, 1.1, 'Plastic', 0, 0, 0, 1, 38.99),  
(1408, 'Hamilton Beach', '76388R', 'Red', 5, 0.97, 'Plastic', 1, 1, 1, 1, 63.99),  
(1409, 'Hamilton Beach', '76606ZA', 'Black', 1, 1.6, 'Plastic & Chrome', 1, 1, 1,  
0, 56.99),  
(1303, 'Cuisinart', 'SC0-60C', 'Grey', 3, 1.9, 'Stainless Steel', 1, 0, 1, 0,  
44.99),  
(1305, 'Cuisinart', '43237-2', 'Black', 2, 0.29, 'Plastic & Steel', 0, 0, 0, 0,  
12.99);
```

```
/*Insert for Orders*/
```

```
INSERT INTO orders VALUES
```

```
(002, 152896, 999, '2018-10-15'),  
(003, 152898, 998, '2018-10-16'),  
(004, 152899, 997, '2018-10-17'),  
(005, 152890, 996, '2018-10-18'),  
(006, 152891, 999, '2018-10-19'),  
(007, 152898, 998, '2018-10-20'),  
(008, 152896, 999, '2018-10-21'),  
(009, 152890, 996, '2018-10-22'),  
(010, 152890, 996, '2018-10-23'),  
(011, 152891, 999, '2018-10-24');
```

```
/*Insert for Order Lines*/  
INSERT INTO order_lines VALUES  
(002, 1501, 102, 14.99),  
(002, 1502, 92, 14.99),  
(002, 1503, 52, 12.99),  
(002, 1504, 26, 12.99),  
(002, 1505, 34, 39.99),  
(003, 1401, 39, 52.99),  
(003, 1301, 40, 38.99),  
(003, 1505, 55, 39.99),  
(004, 1408, 72, 63.99),  
(004, 1301, 34, 38.99),  
(005, 1502, 87, 14.99),  
(005, 1408, 28, 63.99),  
(005, 1409, 47, 56.99),  
(005, 1505, 39, 39.99),  
(006, 1401, 62, 52.99),  
(006, 1303, 64, 49.99),  
(006, 1305, 12, 12.99),  
(006, 1504, 25, 12.99),  
(007, 1504, 19, 39.99),  
(007, 1401, 15, 52.99),  
(007, 1305, 62, 38.99),  
(008, 1408, 102, 63.99),  
(008, 1504, 80, 12.99),  
(009, 1502, 15, 14.99),  
(009, 1501, 64, 14.99),  
(010, 1504, 38, 12.99),  
(010, 1301, 20, 38.99),  
(011, 1408, 22, 63.99),  
(011, 1409, 27, 56.99),  
(011, 1305, 82, 12.99),  
(011, 1505, 10, 39.99);
```

Rules / Constraints

Associates

- Their start date is automatically the current date unless otherwise specified
- If email is not provided, it will be null
- If an associate does not have a manager, it's default is null
- An associate cannot have a salary that is greater than 70
- An associates province must be in the Canada post abbreviation (ie:ON)

Customer

- An customer's province must be in the Canada post abbreviation (ie:ON)

Products

- If the shipping weight is currently unknown, it will have a default of null
- The shipping weight cannot exceed 20kgs.
- The cord storage, knife sharpener, auto shutoff, and dishwasher features are assumed not included.

Orders

- The automatic order date is the current date.

Implementing Constraints

```
/*Adam McKinlay -- November 09, 2018*/
```

```
-----
--                                Create Primary Keys
-----
```

```
ALTER TABLE associates
  ADD CONSTRAINT associates_associate_id_pk
  PRIMARY KEY (associate_id);
```

```
ALTER TABLE customers
  ADD CONSTRAINT customers_customer_id_pk
  PRIMARY KEY (customer_id);
```

```
ALTER TABLE products
  ADD CONSTRAINT products_product_id_pk
  PRIMARY KEY(product_id);
```

```
ALTER TABLE orders
  ADD CONSTRAINT orders_order_id_pk
  PRIMARY KEY (order_id);
```

```
ALTER TABLE order_lines
  ADD CONSTRAINT order_lines_pks
  PRIMARY KEY(order_id, product_id);
```

-- Create Unique Keys

```
ALTER TABLE associates
  ADD CONSTRAINT associates_soc_ins_num_uk
  UNIQUE (soc_ins_num);
```

```
ALTER TABLE customers
  ADD CONSTRAINT customers_company_name_uk
  UNIQUE (customer_company);
```

-- Create Foreign Keys

```
ALTER TABLE associates
  ADD CONSTRAINT associates_manager_id_fk
  FOREIGN KEY(manager_id)
  REFERENCES associates (associate_id);
```

```
ALTER TABLE customers
  ADD CONSTRAINT customers_associate_id_fk
  FOREIGN KEY(associate_id)
  REFERENCES associates (associate_id);
```

/*Orders Foreign Keys*/

```
ALTER TABLE orders
  ADD CONSTRAINT orders_associate_id_fk
  FOREIGN KEY (associate_id)
  REFERENCES associates (associate_id);
```

```
ALTER TABLE orders
  ADD CONSTRAINT orders_customer_id_fk
  FOREIGN KEY (customer_id)
  REFERENCES customers (customer_id);
```

/*Order Lines Foreign Keys*/

```
ALTER TABLE order_lines
  ADD CONSTRAINT order_lines_order_id_fk
  FOREIGN KEY (order_id)
  REFERENCES orders (order_id);
```

```
ALTER TABLE order_lines
  ADD CONSTRAINT order_lines_product_id_fk
  FOREIGN KEY (product_id)
  REFERENCES products (product_id);
```

```

-----
--                               Create Defaults & Constraints
-----

/*Associates*/
ALTER TABLE associates
    ALTER start_date SET DEFAULT CURRENT_DATE;

ALTER TABLE associates
    ALTER email SET DEFAULT NULL;

ALTER TABLE associates
    ALTER manager_id SET DEFAULT NULL;

ALTER TABLE associates
    ADD CONSTRAINT associates_salary_ck
    CHECK(salary<70);

ALTER TABLE associates
    ADD CONSTRAINT associates_province_ck
    CHECK (province IN('AB', 'BC', 'MB', 'NB', 'NL', 'NS', 'NT', 'NU', 'ON',
'PE', 'QC', 'SK', 'YT'));

/*Customers*/
ALTER TABLE customers
    ADD CONSTRAINT customers_province_ck
    CHECK (customer_province IN('AB', 'BC', 'MB', 'NB', 'NL', 'NS', 'NT', 'NU',
'ON', 'PE', 'QC', 'SK', 'YT'));

/*Products*/
ALTER TABLE products
    ALTER shipping_wieght SET DEFAULT NULL;

ALTER TABLE products
    ADD CONSTRAINT products_weight_ck
    CHECK (shipping_wieght < 20);

ALTER TABLE products
    ALTER cord_storage SET DEFAULT 0;

ALTER TABLE products
    ALTER knife_sharpener SET DEFAULT 0;

ALTER TABLE products
    ALTER auto_shutoff SET DEFAULT 0;

ALTER TABLE products
    ALTER dishwasher_safe SET DEFAULT 0;

/*Orders*/
ALTER TABLE orders

```

```
ALTER order_date SET DEFAULT CURRENT_DATE;
```

Testing Constraints

```
/*Adam McKinlay -- November 09, 2018*/
```

```
-----
--                               Testing Primary Keys
-----
```

```
--Constraint Test 1.1
```

```
--Date: November 09, 2018
```

```
--Description: Confirms primary key on associates: associate_id
```

```
--Expected Result: Insert fail duplicate error
```

```
--Action
```

```
INSERT INTO associates VALUES(999, 'Adam', 'Mckinaly', '1524 Lookout Drive',
'Sarnia', 'ON', 'N6L2P8', 'amckinlay@lookout.ca', 5198748658, 60.89, 257976321,
'2004-04-08',null);
```

```
--Actual Result: The statement was aborted because it would have caused a
duplicate key value in a unique or primary key constraint or unique index
identified by 'ASSOCIATES_ASSOCIATE_ID_PK'
```

```
--Constraint Test 2.1
```

```
--Date: November 09, 2018
```

```
--Description: Confirms primary key on customers: customer_id
```

```
--Expected Result: Insert fail duplicate error
```

```
--Action
```

```
INSERT INTO customers VALUES(152896, 'Canadian Tires', 'Penny', 'Sherman',
'1380 Lambton Mall Road', 'Sarnia', 'ON', 'N7S1P8', 5195423403, 999);
```

```
--Actual Result: The statement was aborted because it would have caused a
duplicate key value in a unique or primary key constraint or unique index
identified by 'CUSTOMERS_CUSTOMER_ID_PK'
```

```
--Constraint Test 3.1
```

```
--Date: November 09, 2018
```

```
--Description: Confirms primary key on products: product_id
```

```
--Expected Result: Insert fail duplicate error
```

```
--Action
```

```
INSERT INTO products VALUES(1501, 'Black and Decker', 'C0450W', 'White', 2,
1.1, 'Plastic', 1, 1, 1, 1, 14.99);
```

```
--Actual Result:The statement was aborted because it would have caused a
duplicate key value in a unique or primary key constraint or unique index
identified by 'PRODUCTS_PRODUCT_ID_PK'
```

```
--Constraint Test 4.1
```

```
--Date: November 09, 2018
```

```
--Description: Confirms primary key on orders: order_id
```

```
--Expected Result: Insert fail duplicate error
```

```
--Action
```

```
INSERT INTO orders VALUES(002, 152896, 999, '2018-10-15');
```


--Actual Result: The statement was aborted because it would have caused a duplicate key value in a unique or primary key constraint or unique index identified by 'ORDERS_ORDER_ID_PK'

--Constraint Test 5.1

--Date: November 09, 2018

--Description: Confirms primary key on order_lines: order_id, product_id

--Expected Result: Insert fail duplicate error

--Action

INSERT INTO order_lines VALUES(002, 1501, 102,14.99);

--Actual Result: he statement was aborted because it would have caused a duplicate key value in a unique or primary key constraint or unique index identified by 'ORDER_LINES_PKS'

 -- Testing Unique Keys

--Constraint Test 1.2

--Date: November 09, 2018

--Description: Confirms unique value for associates: soc_ins_num

--Expected Result: Insert fail duplicate error

--Action

INSERT INTO associates VALUES(989, 'Adam', 'Mckinaly', '1524 Lookout Drive', 'Sarnia', 'ON', 'N6L2P8', 'amckinlay@lookout.ca', 5198748658, 60.89, 257946321, '2004-04-08',null);

--Actual Result: The statement was aborted because it would have caused a duplicate key value in a unique or primary key constraint or unique index identified by 'ASSOCIATES_SOC_INS_NUM_UK'

--Constraint Test 2.2

--Date: November 09, 2018

--Description: Confirms unique value for customers: customer_name

--Expected Result: Insert fail duplicate error

--Action

INSERT INTO customers VALUES(152846, 'Canadian Tire', 'Penny', 'Sherman', '1380 Lambton Mall Road', 'Sarnia', 'ON', 'N7S1P8', 5195423403, 999);

--Actual Result: The statement was aborted because it would have caused a duplicate key value in a unique or primary key constraint or unique index identified by 'CUSTOMERS_COMPANY_NAME_UK'

 -- Testing Foreign Keys

--Constraint Test 1.3

--Date: November 09, 2018

--Description: Confirms store_mgr_id is in employees: employee_id

--Expected Result: Insert fail: reference key not found

--Action

```
INSERT INTO associates VALUES(927, 'Adam', 'Mckinaly', '1524 Lookout Drive',  
'Sarnia', 'ON', 'N6L2P8', 'amckinlay@lookout.ca', 5198748658, 60.89, 257986321,  
'2004-04-08',952);  
--Actual Result: INSERT on table 'ASSOCIATES' caused a violation of foreign key  
constraint 'ASSOCIATES_MANAGER_ID_FK' for key (952)
```

```
--Constraint Test 2.3  
--Date: November 09, 2018  
--Description: Confirms coach_id is in employees: employee_id  
--Expected Result: Insert fail: reference key not found  
--Action  
INSERT INTO customers VALUES(152895, 'Canadian Tires', 'Penny', 'Sherman',  
'1380 Lambton Mall Road', 'Sarnia', 'ON', 'N7S1P8', 5195423403, 929);  
--Actual Result: INSERT on table 'CUSTOMERS' caused a violation of foreign key  
constraint 'CUSTOMERS_ASSOCIATE_ID_FK' for key (929)
```

```
--Constraint Test 4.3.1  
--Date: November 09, 2018  
--Description: Confirms coach_id is in orders: associate_id  
--Expected Result: Insert fail: reference key not found  
--Action  
INSERT INTO orders VALUES(022, 152896, 929, '2018-10-15');  
--Actual Result: INSERT on table 'ORDERS' caused a violation of foreign key  
constraint 'ORDERS_ASSOCIATE_ID_FK' for key (929)
```

```
--Constraint Test 4.3.2  
--Date: November 09, 2018  
--Description: Confirms coach_id is in orders: associate_id  
--Expected Result: Insert fail: reference key not found  
--Action  
INSERT INTO orders VALUES(022, 152116, 999, '2018-10-15');  
--Actual Result: INSERT on table 'ORDERS' caused a violation of foreign key  
constraint 'ORDERS_CUSTOMER_ID_FK' for key (152116)
```

```
--Constraint Test 5.3.1  
--Date: November 09, 2018  
--Description: Confirms coach_id is in order_lines: order_id  
--Expected Result: Insert fail: reference key not found  
--Action  
INSERT INTO order_lines VALUES(082, 1501, 102,14.99);  
--Actual Result: INSERT on table 'ORDER_LINES' caused a violation of foreign key  
constraint 'ORDER_LINES_ORDER_ID_FK' for key (82)
```

```
--Constraint Test 5.3.2
```

```
--Date: November 09, 2018
--Description: Confirms coach_id is in order_lines: product_id
--Expected Result: Insert fail: reference key not found
--Action
    INSERT INTO order_lines VALUES(002, 1901, 102,14.99);
--Actual Result: INSERT on table 'ORDER_LINES' caused a violation of foreign key
constraint 'ORDER_LINES_PRODUCT_ID_FK' for key (1901)
```

```
-----
--                               Testing Constraints
-----
```

```
--Constraint Test 1.4.1
--Date: November 09, 2018
--Description: Confirms coach_id is in associates: salary
--Expected Result: Insert fail: larger than max value
--Action
    INSERT INTO associates VALUES(927, 'Adam', 'Mckinaly', '1524 Lookout Drive',
'Sarnia', 'ON', 'N6L2P8', 'amckinlay@lookout.ca', 5198748658, 90, 257989321,
'2004-04-08',null);
--Actual Result: The check constraint 'ASSOCIATES_SALARY_CK' was violated while
performing an INSERT or UPDATE on table
```

```
--Constraint Test 1.4.2
--Date: November 09, 2018
--Description: Confirms coach_id is in associates: province
--Expected Result: Insert fail: not acceptable value
--Action
    INSERT INTO associates VALUES(927, 'Adam', 'Mckinaly', '1524 Lookout Drive',
'Sarnia', 'PN', 'N6L2P8', 'amckinlay@lookout.ca', 5198748658, 60.32, 257989321,
'2004-04-08',null);
--Actual Result: The check constraint 'ASSOCIATES_PROVINCE_CK' was violated while
performing an INSERT or UPDATE on table
```

```
-----
--Constraint Test 2.4
--Date: November 09, 2018
--Description: Confirms coach_id is in customers: customers_province
--Expected Result: Insert fail: not acceptable value
--Action
    INSERT INTO customers VALUES(152826, 'Canadian Tires', 'Penny', 'Sherman',
'1380 Lambton Mall Road', 'Sarnia', 'PN', 'N7S1P8', 5195423403, 999);
--Actual Result: The check constraint 'CUSTOMERS_PROVINCE_CK' was violated while
performing an INSERT or UPDATE on table
```

```
-----
--Constraint Test 3.4
--Date: November 09, 2018
```

--Description: Confirms coach_id is in products: customers_province

--Expected Result: Insert fail: surpasses weight value

--Action

```
INSERT INTO products VALUES(1551, 'Black and Decker', 'C0450W', 'White', 2, 30,  
'Plastic', 1, 1, 1, 1, 14.99);
```

--Actual Result: The check constraint 'PRODUCTS_WEIGHT_CK' was violated while performing an INSERT or UPDATE on table