Revenue Analysis Dashboard

- **Tools Used : Power BI, SQL Server**
- **In this project there are 2 schemas and 9 tables created in SQL. Values are inserted into the tables and using 'joins' the final table is derived from the other tables having all the necessary columns for the analysis. Finally the table is imported to power BI and visualized.**

- **Schemas :**
  1. **production**
  2. **sales**

- **Tables :**
  1. **production.categories**
  2. **production.brands**
  3. **production.stocks**
  4. **sales.customers**
  5. **sales.stores**
  6. **production.products**
  7. **sales.staffs**
  8. **sales.orders**
  9. **sales.order_items**

Steps Involved

➢ Schema Creation (2 schemas)

```
CREATE SCHEMA production;
go
CREATE SCHEMA sales;
Go
```

➢ Tables Creation (9 tables)

1.
```sql
CREATE TABLE production.categories (
    category_id INT IDENTITY (1, 1) PRIMARY KEY,
    category_name VARCHAR (255) NOT NULL
    );
```

2.
```sql
CREATE TABLE production.brands (
    brand_id INT IDENTITY (1, 1) PRIMARY KEY,
    brand_name VARCHAR (255) NOT NULL
    );
```

3.
```sql
CREATE TABLE sales.customers (
    customer_id INT IDENTITY (1, 1) PRIMARY KEY,
    first_name VARCHAR (255) NOT NULL,
    last_name VARCHAR (255) NOT NULL,
    phone VARCHAR (25),
    email VARCHAR (255) NOT NULL,
    street VARCHAR (255),
    city VARCHAR (50),
    state VARCHAR (25),
    zip_code VARCHAR (5)
    );
```

4.
```sql
CREATE TABLE sales.stores (
    store_id INT IDENTITY (1, 1) PRIMARY KEY,
    store_name VARCHAR (255) NOT NULL,
    phone VARCHAR (25),
    email VARCHAR (255),
    street VARCHAR (255),
    city VARCHAR (255),
    state VARCHAR (10),
    zip_code VARCHAR (5)
    );
```

5.
```sql
CREATE TABLE production.products (
    product_id INT IDENTITY (1, 1) PRIMARY KEY,
    product_name VARCHAR (255) NOT NULL,
    brand_id INT NOT NULL,
    category_id INT NOT NULL,
    model_year SMALLINT NOT NULL,
    list_price DECIMAL (10, 2) NOT NULL,
    FOREIGN KEY (category_id) REFERENCES production.categories (category_id) ON DELETE
CASCADE ON UPDATE CASCADE,
    FOREIGN KEY (brand_id) REFERENCES production.brands (brand_id) ON DELETE CASCADE
ON UPDATE CASCADE
);
```

6.
```
CREATE TABLE sales.staffs (
    staff_id INT IDENTITY (1, 1) PRIMARY KEY,
    first_name VARCHAR (50) NOT NULL,
    last_name VARCHAR (50) NOT NULL,
    email VARCHAR (255) NOT NULL UNIQUE,
    phone VARCHAR (25),
    active tinyint NOT NULL,
    store_id INT NOT NULL,
    manager_id INT,
    FOREIGN KEY (store_id) REFERENCES sales.stores (store_id) ON DELETE CASCADE ON
UPDATE CASCADE,
    FOREIGN KEY (manager_id) REFERENCES sales.staffs (staff_id) ON DELETE NO ACTION ON
UPDATE NO ACTION
);
```

7.
```
CREATE TABLE sales.orders (
    order_id INT IDENTITY (1, 1) PRIMARY KEY,
    customer_id INT,
    order_status tinyint NOT NULL,
    -- Order status: 1 = Pending; 2 = Processing; 3 = Rejected; 4 = Completed
    order_date DATE NOT NULL,
    required_date DATE NOT NULL,
    shipped_date DATE,
    store_id INT NOT NULL,
    staff_id INT NOT NULL,
    FOREIGN KEY (customer_id) REFERENCES sales.customers (customer_id) ON DELETE
CASCADE ON UPDATE CASCADE,
    FOREIGN KEY (store_id) REFERENCES sales.stores (store_id) ON DELETE CASCADE ON
UPDATE CASCADE,
    FOREIGN KEY (staff_id) REFERENCES sales.staffs (staff_id) ON DELETE NO ACTION ON
UPDATE NO ACTION
);
```

8.
```
CREATE TABLE sales.order_items (
    order_id INT,
    item_id INT,
    product_id INT NOT NULL,
    quantity INT NOT NULL,
    list_price DECIMAL (10, 2) NOT NULL,
    discount DECIMAL (4, 2) NOT NULL DEFAULT 0,
    PRIMARY KEY (order_id, item_id),
    FOREIGN KEY (order_id) REFERENCES sales.orders (order_id) ON DELETE CASCADE ON
UPDATE CASCADE,
    FOREIGN KEY (product_id) REFERENCES production.products (product_id) ON DELETE
CASCADE ON UPDATE CASCADE
);
```

```
9. CREATE TABLE production.stocks (
    store_id INT,
    product_id INT,
    quantity INT,
    PRIMARY KEY (store_id, product_id),
    FOREIGN KEY (store_id) REFERENCES sales.stores (store_id) ON DELETE CASCADE ON
UPDATE CASCADE,
    FOREIGN KEY (product_id) REFERENCES production.products (product_id) ON DELETE
CASCADE ON UPDATE CASCADE
);
```

➢ Inserting data into each table (Providing only 1 entry for each table for simplicity)

```
1. INSERT INTO production.brands(brand_id,brand_name) VALUES(1,'Electra')
2. INSERT INTO production.categories(category_id,category_name) VALUES(1,'Children
   Bicycles')
3. INSERT INTO production.products(product_id, product_name, brand_id,
   category_id, model_year, list_price) VALUES(1,'Trek 820 -
   2016',9,6,2016,379.99)

4. INSERT INTO sales.stores(store_name, phone, email, street, city, state,
   zip_code)VALUES('Santa Cruz Bikes','(831) 476-
   4321','santacruz@bikes.shop','3700 Portola Drive', 'Santa Cruz','CA',95060)

5. INSERT INTO production.stocks(store_id, product_id, quantity) VALUES(1,1,27);

6. INSERT INTO sales.orders(order_id, customer_id, order_status, order_date,
   required_date, shipped_date, store_id,staff_id)
   VALUES(82,1223,4,'20160218','20160221','20160220',2,6);

7. INSERT INTO sales.order_items(order_id, item_id, product_id, quantity,
   list_price,discount) VALUES(274,1,11,2,1680.99,0.05);

8. INSERT INTO sales.customers(first_name, last_name, phone, email, street, city,
   state, zip_code)
   VALUES('Dorothea','Miranda',NULL,'dorothea.miranda@aol.com','7882 Parker St.
   ','Upland','CA',91784);

9. INSERT INTO sales.staffs(staff_id, first_name, last_name, email,
   phone,active,store_id,manager_id)
   VALUES('Fabiola','Jackson','fabiola.jackson@bikes.shop', ' (831) 555-5554',1,1,
   NULL)
```

- **Using JOIN, the necessary columns are joined from all the tables and the final table is imported to Power BI and visualized to derive insights.** **(Showing only top 5 for simplicity)**

```
select top 5 sales.orders.order_id,
concat(sales.customers.first_name,' ',sales.customers.last_name) as Customer_name,
sum(sales.order_items.quantity) as Quantitysold,
sum(sales.order_items.quantity* sales.order_items.list_price) as Revenue,
sales.orders.order_date, sales.customers.city,
production.products.product_name, production.categories.category_name,
production.brands.brand_name, sales.stores.store_name,
concat(sales.staffs.first_name,' ', sales.staffs.last_name) as staff_name
from sales.orders
join sales.customers on sales.customers.customer_id = sales.orders.customer_id
join sales.order_items on sales.order_items.order_id = sales.orders.order_id
join production.products  on sales.order_items.product_id =
production.products.product_id
join production.categories on production.categories.category_id =
production.products.category_id
join production.brands on production.brands.brand_id = production.products.brand_id
join sales.stores on sales.orders.store_id = sales.stores.store_id
join sales.staffs on sales.orders.staff_id = sales.staffs.staff_id
group by sales.orders.order_id,
concat(sales.customers.first_name,' ',sales.customers.last_name),
sales.orders.order_date,
sales.customers.city,
production.products.product_name,
production.categories.category_name,
production.brands.brand_name,
sales.stores.store_name,
concat(sales.staffs.first_name,' ', sales.staffs.last_name)
```

- **Final Table**

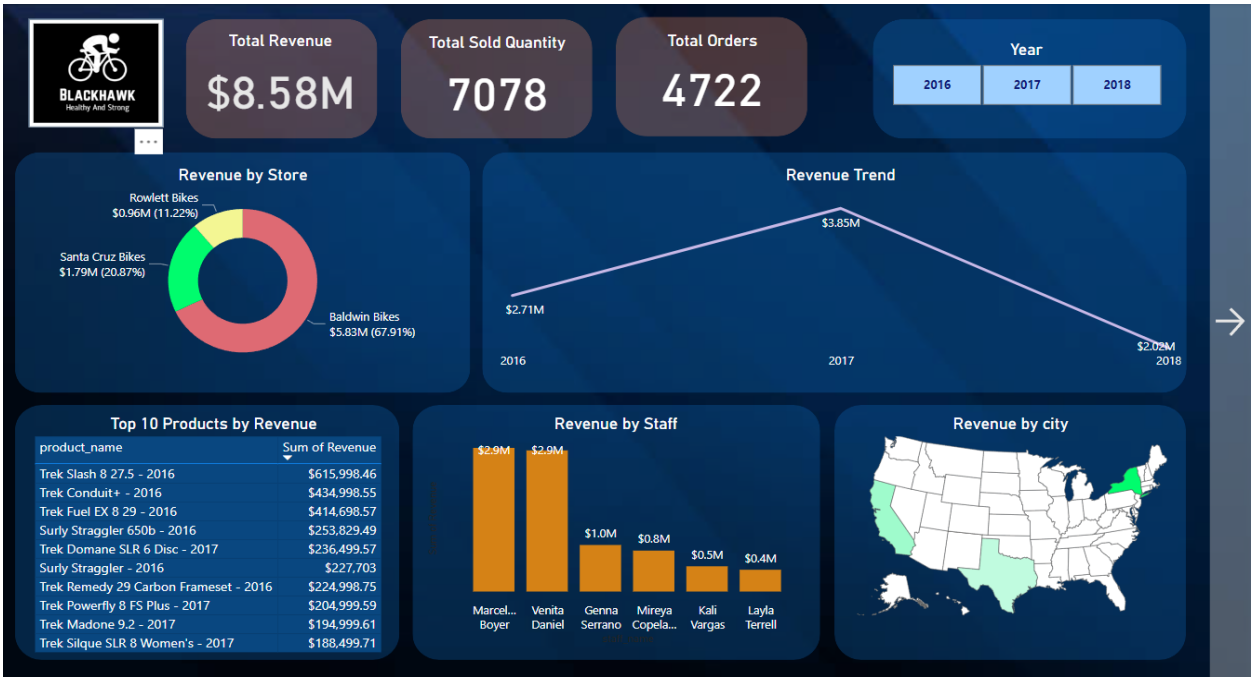
Results | Messages

	order_id	Customer_name	Quantitysold	Revenue	order_date	city	product_name	category_name	brand_name	store_name	staff_name
1	1	Johnathan Velazquez	2	1199.98	2016-01-01	Pleasanton	Electra Townie Origin...	Cruisers Bicycles	Electra	Santa Cruz Bikes	Mireya Copeland
2	1	Johnathan Velazquez	1	599.99	2016-01-01	Pleasanton	Electra Townie Origin...	Cruisers Bicycles	Electra	Santa Cruz Bikes	Mireya Copeland
3	1	Johnathan Velazquez	2	3098.00	2016-01-01	Pleasanton	Surly Straggler - 2016	Cyclocross Bicycles	Surly	Santa Cruz Bikes	Mireya Copeland
4	1	Johnathan Velazquez	1	2899.99	2016-01-01	Pleasanton	Trek Fuel EX 8 29 - 20...	Mountain Bikes	Trek	Santa Cruz Bikes	Mireya Copeland
5	1	Johnathan Velazquez	2	3599.98	2016-01-01	Pleasanton	Trek Remedy 29 Carb...	Mountain Bikes	Trek	Santa Cruz Bikes	Mireya Copeland

➢ Final Dashboards

➢

- **Dashboard 1**



- **Dashboard 2**