Tugas Besar Basis Data

Implemetasi Basis Data pada Kumpulan Transaksi Toko Ritel Online di Inggris

Kelompok 1 - RB

Tugas Besar Basis Data

Super Team

120450058
Suhendar Aditya

120450050
M. Dafha Syahrizal

120450070
Puti Windrahmatullah

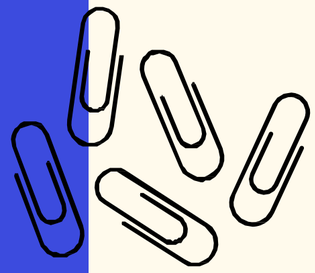
120450080
Anastasya N. H.

120450022
Fikri Dwi A.

120450078
Barrera Putra

OUTLINE

1. Introduction	2. Problem Statement	3. Data Description
4. Method	5. Result and Discussion	6. Conclusion



Tugas Besar Basis Data

INTRODUCTION

Menggunakan dataset Ritel Online yang berisi semua transaksi yang terjadi untuk ritel online non-toko yang berbasis di Inggris dan terdaftar antara periode 12/01/2009

Tugas Besar Basis Data

PROBLEM STATEMENT

1. Barang apa yang paling banyak dibeli dan paling sedikit dibeli dalam pasar daring oleh salah satu customer?
2. Berapa rata rata harga barang yang dibeli, rata- rata penjualan barang tiap item, dan total jumlah barang yang terjual?
3. Menghitung seberapa banyak barang yang dibeli customer(perorang)
4. Menghitung banyak item yang dijual?
5. Bagaimana tampilan data terbaru setelah diolah menggunakan query SQL?

Tugas Besar Basis Data

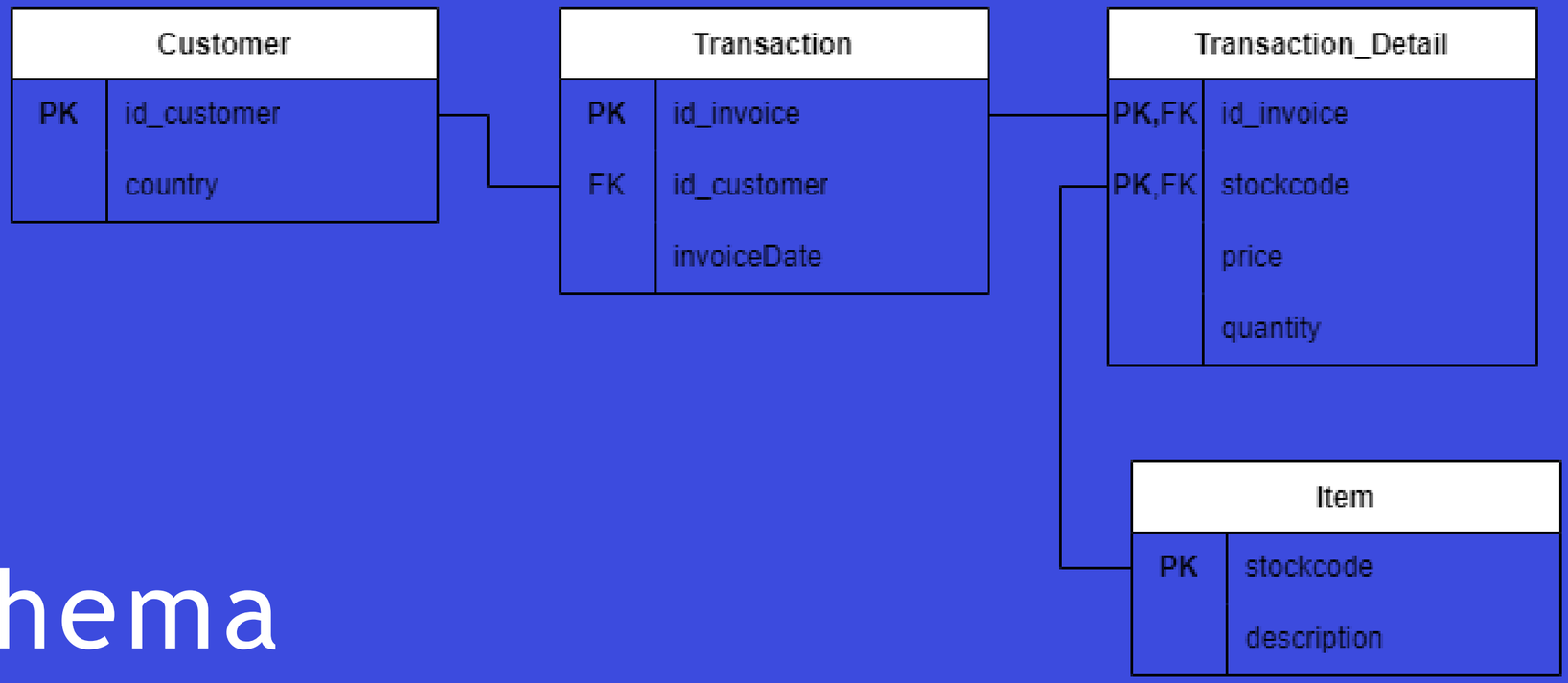
DATA DESCRIPTION

Data Awal

Invoice	StockCode	Description	Quantity	InvoiceDate	Price	Customer ID	Country
489434	85048	15CM CHRISTMAS GLASS BALL 20 LIGHTS	12	01/12/09 07.45	0,315972	13085.0	United Kingdom
489434	79323P	PINK CHERRY LIGHTS	12	01/12/09 07.45	0,302083	13085.0	United Kingdom
489434	79323W	WHITE CHERRY LIGHTS	12	01/12/09 07.45	0,302083	13085.0	United Kingdom
489434	22041	RECORD FRAME 7" SINGLE SIZE	48	01/12/09 07.45	0,084028	13085.0	United Kingdom
489434	21232	STRAWBERRY CERAMIC TRINKET BOX	24	01/12/09 07.45	0,059028	13085.0	United Kingdom
489434	22064	PINK DOUGHNUT TRINKET POT	24	01/12/09 07.45	0,086806	13085.0	United Kingdom
489434	21871	SAVE THE PLANET MUG	24	01/12/09 07.45	0,059028	13085.0	United Kingdom
489434	21523	FANCY FONT HOME SWEET HOME DOORMAT	10	01/12/09 07.45	0,274306	13085.0	United Kingdom
489435	22350	CAT BOWL	12	01/12/09 07.46	0,121528	13085.0	United Kingdom
489435	22349	DOG BOWL , CHASING BALL DESIGN	12	01/12/09 07.46	0,177083	13085.0	United Kingdom
489435	22195	HEART MEASURING SPOONS LARGE	24	01/12/09 07.46	0,086806	13085.0	United Kingdom
489435	22353	LUNCHBOX WITH CUTLERY FAIRY CAKES	12	01/12/09 07.46	0,121528	13085.0	United Kingdom
489436	48173C	DOOR MAT BLACK FLOCK	10	01/12/09 09.06	0,274306	13078.0	United Kingdom
489436	21755	LOVE BUILDING BLOCK WORD	18	01/12/09 09.06	0,239583	13078.0	United Kingdom
489436	21754	HOME BUILDING BLOCK WORD	3	01/12/09 09.06	0,274306	13078.0	United Kingdom
489436	84879	ASSORTED COLOUR BIRD ORNAMENT	16	01/12/09 09.06	0,089583	13078.0	United Kingdom
489436	22119	PEACE WOODEN BLOCK LETTERS	3	01/12/09 09.06	0,315972	13078.0	United Kingdom
489436	22142	CHRISTMAS CRAFT WHITE FAIRY	12	01/12/09 09.06	0,072917	13078.0	United Kingdom
489436	22296	HEART IVORY TRELLIS LARGE	12	01/12/09 09.06	0,086806	13078.0	United Kingdom
489436	22295	HEART FILIGREE DOVE LARGE	12	01/12/09 09.06	0,086806	13078.0	United Kingdom
489436	22109	FULL ENGLISH BREAKFAST PLATE	16	01/12/09 09.06	0,152083	13078.0	United Kingdom
489436	22107	PIZZA PLATE IN BOX	4	01/12/09 09.06	0,177083	13078.0	United Kingdom
489436	22194	BLACK DINER WALL CLOCK	2	01/12/09 09.06	0,336806	13078.0	United Kingdom
489436	35004B	SET OF 3 BLACK FLYING DUCKS	12	01/12/09 09.06	0,211806	13078.0	United Kingdom
489436	82582	AREA PATROLLED METAL SIGN	12	01/12/09 09.06	0,084028	13078.0	United Kingdom
489436	21181	PLEASE ONE PERSON METAL SIGN	12	01/12/09 09.06	0,084028	13078.0	United Kingdom
489436	21756	BATH BUILDING BLOCK WORD	3	01/12/09 09.06	0,274306	13078.0	United Kingdom
489436	21333	CLASSIC WHITE FRAME	6	01/12/09 09.06	0,149306	13078.0	United Kingdom
489436	84596F	SMALL MARSHMALLOWS PINK BOWL	8	01/12/09 09.06	0,059028	13078.0	United Kingdom
489436	84596L	BISCUITS SMALL BOWL LIGHT BLUE	8	01/12/09 09.06	0,059028	13078.0	United Kingdom
489436	22111	SCOTTIE DOG HOT WATER BOTTLE	24	01/12/09 09.06	0,184028	13078.0	United Kingdom
489437	22143	CHRISTMAS CRAFT HEART DECORATIONS	6	01/12/09 09.08	0,084028	15362.0	United Kingdom
489437	22145	CHRISTMAS CRAFT HEART STOCKING	6	01/12/09 09.08	0,084028	15362.0	United Kingdom
489437	22130	PARTY CONE CHRISTMAS DECORATION	12	01/12/09 09.08	0,059028	15362.0	United Kingdom
489437	21364	PEACE SMALL WOOD LETTERS	2	01/12/09 09.08	0,302083	15362.0	United Kingdom
489437	21360	JOY LARGE WOOD LETTERS	1	01/12/09 09.08	0,440972	15362.0	United Kingdom
489437	21351	CINAMMON & ORANGE WREATH	2	01/12/09 09.08	0,302083	15362.0	United Kingdom
489437	21352	EUCALYPTUS & PINECONE WREATH	2	01/12/09 09.08	0,302083	15362.0	United Kingdom
489437	35400	WOODEN BOX ADVENT CALENDAR	2	01/12/09 09.08	0,399306	15362.0	United Kingdom
489437	20695	FLORAL BLUE MONSTER	3	01/12/09 09.08	0,184028	15362.0	United Kingdom
489437	37370	RETRO COFFEE MUGS ASSORTED	12	01/12/09 09.08	0,059028	15362.0	United Kingdom
489437	10002	INFLATABLE POLITICAL GLOBE	12	01/12/09 09.08	0,059028	15362.0	United Kingdom
489437	84507B	STRIPES DESIGN MONKEY DOLL	6	01/12/09 09.08	0,121528	15362.0	United Kingdom
489437	20703	BLUE PADDED SOFT MOBILE	3	01/12/09 09.08	0,184028	15362.0	United Kingdom
489437	21987	PACK OF 6 SKULL PAPER CUPS	12	01/12/09 09.08	0,045139	15362.0	United Kingdom
489437	21989	PACK OF 20 SKULL PAPER NAPKINS	12	01/12/09 09.08	0,059028	15362.0	United Kingdom
489437	84970S	HANGING HEART ZINC T-LIGHT HOLDER	12	01/12/09 09.08	0,059028	15362.0	United Kingdom
489437	20971	PINK BLUE FELT CRAFT TRINKET BOX	12	01/12/09 09.08	0,059028	15362.0	United Kingdom
489437	22271	FELTCRAFT DOLL ROSIE	6	01/12/09 09.08	0,149306	15362.0	United Kingdom

Tugas Besar Basis Data

DATA DESCRIPTION

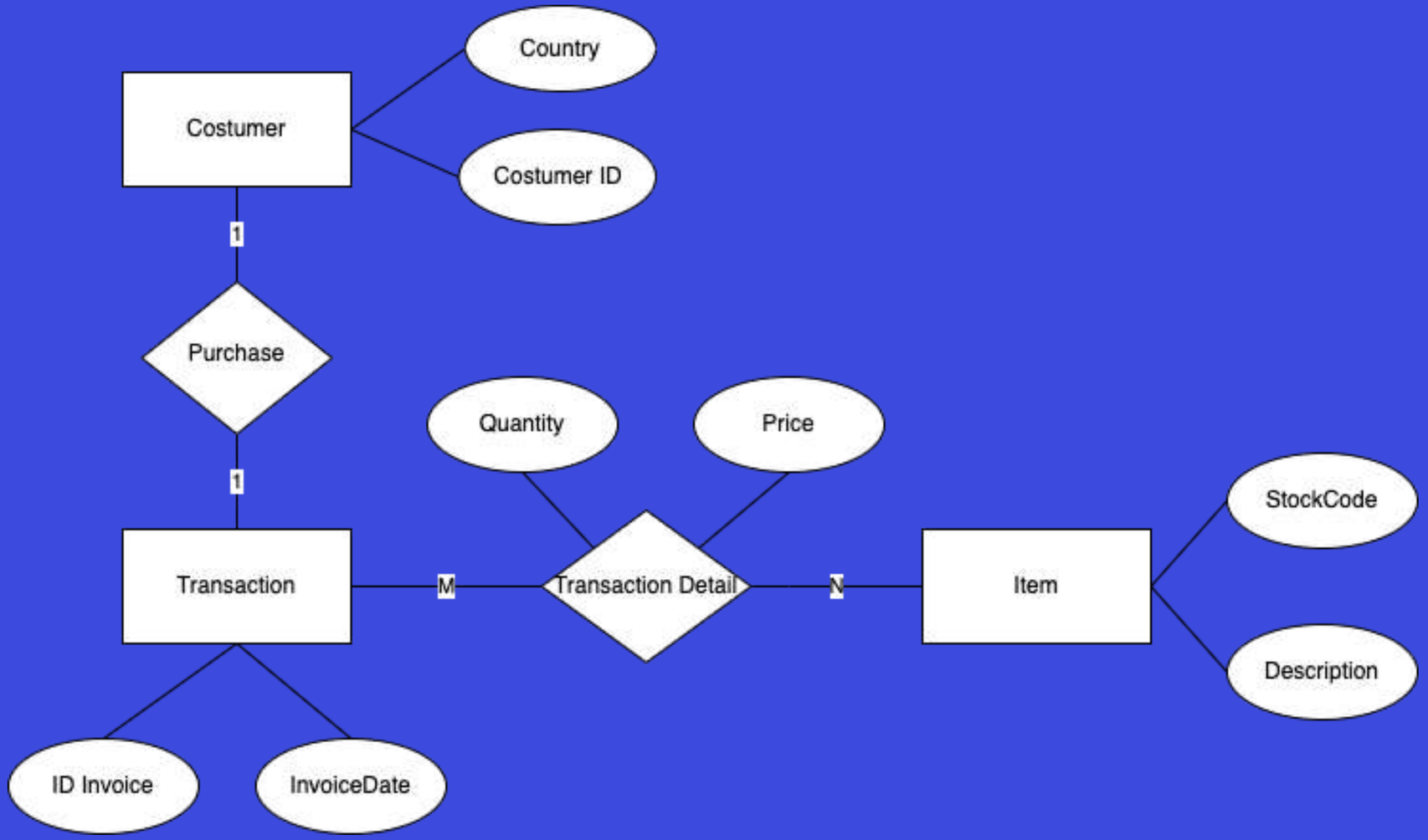


Relation Schema

Tugas Besar Basis Data

DATA DESCRIPTION

ERD



Tugas Besar Basis Data

METHODS

CREATE	Membuat database, fungsi, index, prosedur dan tabel
RENAME	Mengganti nama tabel
ALTER	Mengubah struktur tabel
DROP	Menghapus database, fungsi, index, prosedur dan tabel

DDL (Data Definition Language)

Tugas Besar Basis Data

METHODS

SELECT	Menampilkan record pada sebuah tabel
INSERT	Menambahkan record baru pada tabel
UPDATE	Mengubah data
DELETE	Menghapus data

DML (Data Manipulation Language)

Tugas Besar Basis Data

METHODS

BETWEEN	Query dengan fungsi Between antara lain between dan not between.
AGGREGATE	Query dengan fungsi Aggredat antara lain MIN ( ), MAX ( ), COUNT( ), SUM ( ), AVG ( ).
GROUP BY	Mengelompokkan sekumpulan record berdasarkan kolom(-kolom) tertentu.
HAVING	Membatasi kelompok yang ditampilkan.

Advance Query

Tugas Besar Basis Data

RESULTS & DISCUSSIONS

1NF

Normalisasi Dataset

id_Invoice	StockCode	Description	Quantity	InvoiceDate	Price	id_customer	Country
489434	85048	15CM CHRISTMAS GLASS BALL 20 LIGHTS	12	01/12/09 07.45	0,315972222	13085.0	United Kingdom
489434	79323P	PINK CHERRY LIGHTS	12	01/12/09 07.45	0,302083333	13085.0	United Kingdom
489434	79323W	WHITE CHERRY LIGHTS	12	01/12/09 07.45	0,302083333	13085.0	United Kingdom
489434	22041	RECORD FRAME 7" SINGLE SIZE	48	01/12/09 07.45	0,084027778	13085.0	United Kingdom
489434	21232	STRAWBERRY CERAMIC TRINKET BOX	24	01/12/09 07.45	0,059027778	13085.0	United Kingdom
489434	22064	PINK DOUGHNUT TRINKET POT	24	01/12/09 07.45	0,086805556	13085.0	United Kingdom
489435	22350	CAT BOWL	12	01/12/09 07.46	0,121527778	13085.0	United Kingdom
489435	22349	DOG BOWL , CHASING BALL DESIGN	12	01/12/09 07.46	0,177083333	13085.0	United Kingdom
489435	22195	HEART MEASURING SPOONS LARGE	24	01/12/09 07.46	0,086805556	13085.0	United Kingdom
489435	22353	LUNCHBOX WITH CUTLERY FAIRY CAKES	12	01/12/09 07.46	0,121527778	13085.0	United Kingdom
489436	48173C	DOOR MAT BLACK FLOCK	10	01/12/09 09.06	0,274305556	13078.0	United Kingdom
489436	21755	LOVE BUILDING BLOCK WORD	18	01/12/09 09.06	0,239583333	13078.0	United Kingdom
489436	21754	HOME BUILDING BLOCK WORD	3	01/12/09 09.06	0,274305556	13078.0	United Kingdom
489436	84879	ASSORTED COLOUR BIRD ORNAMENT	16	01/12/09 09.06	0,089583333	13078.0	United Kingdom
489436	22119	PEACE WOODEN BLOCK LETTERS	3	01/12/09 09.06	0,315972222	13078.0	United Kingdom
489436	22142	CHRISTMAS CRAFT WHITE FAIRY	12	01/12/09 09.06	0,072916667	13078.0	United Kingdom
489436	22296	HEART IVORY TRELLIS LARGE	12	01/12/09 09.06	0,086805556	13078.0	United Kingdom
489436	22295	HEART FILIGREE DOVE LARGE	12	01/12/09 09.06	0,086805556	13078.0	United Kingdom
489436	22109	FULL ENGLISH BREAKFAST PLATE	16	01/12/09 09.06	0,152083333	13078.0	United Kingdom
489436	22107	PIZZA PLATE IN BOX	4	01/12/09 09.06	0,177083333	13078.0	United Kingdom
489437	20695	FLORAL BLUE MONSTER	3	01/12/09 09.08	0,184027778	15362.0	United Kingdom
489437	37370	RETRO COFFEE MUGS ASSORTED	12	01/12/09 09.08	0,059027778	15362.0	United Kingdom
489437	10002	INFLATABLE POLITICAL GLOBE	12	01/12/09 09.08	0,059027778	15362.0	United Kingdom
489437	84507B	STRIPES DESIGN MONKEY DOLL	6	01/12/09 09.08	0,121527778	15362.0	United Kingdom
489437	20703	BLUE PADDED SOFT MOBILE	3	01/12/09 09.08	0,184027778	15362.0	United Kingdom
489437	21987	PACK OF 6 SKULL PAPER CUPS	12	01/12/09 09.08	0,045138889	15362.0	United Kingdom
489437	21989	PACK OF 20 SKULL PAPER NAPKINS	12	01/12/09 09.08	0,059027778	15362.0	United Kingdom
489437	84970S	HANGING HEART ZINC T-LIGHT HOLDER	12	01/12/09 09.08	0,059027778	15362.0	United Kingdom
489437	20971	PINK BLUE FELT CRAFT TRINKET BOX	12	01/12/09 09.08	0,059027778	15362.0	United Kingdom
489437	22271	FELTCRAFT DOLL ROSIE	6	01/12/09 09.08	0,149305556	15362.0	United Kingdom

Tugas Besar Basis Data

RESULTS & DISCUSSIONS

2NF

Normalisasi Dataset

Tabel Customer

Customer ID	Country
13085.0	United Kingdom
13078.0	United Kingdom
15362.0	United Kingdom

Tabel Transaksi

Invoice	InvoiceDate	Quantity
489434	01/12/09 07.45	12
489434	01/12/09 07.45	12
489434	01/12/09 07.45	12
489434	01/12/09 07.45	48
489434	01/12/09 07.45	24
489434	01/12/09 07.45	24
489435	01/12/09 07.46	12
489435	01/12/09 07.46	12
489435	01/12/09 07.46	24
489435	01/12/09 07.46	12
489436	01/12/09 09.06	10
489436	01/12/09 09.06	18
489436	01/12/09 09.06	3
489436	01/12/09 09.06	16
489436	01/12/09 09.06	3
489436	01/12/09 09.06	12
489436	01/12/09 09.06	12
489436	01/12/09 09.06	12
489436	01/12/09 09.06	16
489436	01/12/09 09.06	4
489437	01/12/09 09.08	3
489437	01/12/09 09.08	12
489437	01/12/09 09.08	12
489437	01/12/09 09.08	6
489437	01/12/09 09.08	3
489437	01/12/09 09.08	12
489437	01/12/09 09.08	12
489437	01/12/09 09.08	12
489437	01/12/09 09.08	12
489437	01/12/09 09.08	6

Tabel Item

StockCode	Description	Price
85048	15CM CHRISTMAS GLASS BALL 20 LIGHTS	0,315972222
79323P	PINK CHERRY LIGHTS	0,302083333
79323W	WHITE CHERRY LIGHTS	0,302083333
22041	RECORD FRAME 7" SINGLE SIZE	0,084027778
21232	STRAWBERRY CERAMIC TRINKET BOX	0,059027778
22064	PINK DOUGHNUT TRINKET POT	0,086805556
22350	CAT BOWL	0,121527778
22349	DOG BOWL , CHASING BALL DESIGN	0,177083333
22195	HEART MEASURING SPOONS LARGE	0,086805556
22353	LUNCHBOX WITH CUTLERY FAIRY CAKES	0,121527778
48173C	DOOR MAT BLACK FLOCK	0,274305556
21755	LOVE BUILDING BLOCK WORD	0,239583333
21754	HOME BUILDING BLOCK WORD	0,274305556
84879	ASSORTED COLOUR BIRD ORNAMENT	0,089583333
22119	PEACE WOODEN BLOCK LETTERS	0,315972222
22142	CHRISTMAS CRAFT WHITE FAIRY	0,072916667
22296	HEART IVORY TRELLIS LARGE	0,086805556
22295	HEART FILIGREE DOVE LARGE	0,086805556
22109	FULL ENGLISH BREAKFAST PLATE	0,152083333
22107	PIZZA PLATE IN BOX	0,177083333
20695	FLORAL BLUE MONSTER	0,184027778
37370	RETRO COFFEE MUGS ASSORTED	0,059027778
10002	INFLATABLE POLITICAL GLOBE	0,059027778
84507B	STRIPES DESIGN MONKEY DOLL	0,121527778
20703	BLUE PADDED SOFT MOBILE	0,184027778
21987	PACK OF 6 SKULL PAPER CUPS	0,045138889
21989	PACK OF 20 SKULL PAPER NAPKINS	0,059027778
84970S	HANGING HEART ZINC T-LIGHT HOLDER	0,059027778
20971	PINK BLUE FELT CRAFT TRINKET BOX	0,059027778
22271	FELTCRAFT DOLL ROSIE	0,149305556

Tugas Besar Basis Data

RESULTS & DISCUSSIONS

3NF

Normalisasi Dataset

Table of Customer

Customer ID	Country
13085.0	United Kingdom
13078.0	United Kingdom
15362.0	United Kingdom

Table of Transaction_

id_Invoice	id_customer	InvoiceDate
489434	13085.0	01/12/2009 7:45
489435	13085.0	01/12/2009 7:46
489436	13078.0	01/12/2009 9:06
489437	15362.0	01/12/2009 9:08

Table of Item

StockCode	Description
85048	15CM CHRISTMAS GLASS BALL 20 LIGHTS
79323P	PINK CHERRY LIGHTS
79323W	WHITE CHERRY LIGHTS
22041	RECORD FRAME 7" SINGLE SIZE
21232	STRAWBERRY CERAMIC TRINKET BOX
22064	PINK DOUGHNUT TRINKET POT
21871	SAVE THE PLANET MUG
21523	FANCY FONT HOME SWEET HOME DOORMAT
22350	CAT BOWL
22349	DOG BOWL , CHASING BALL DESIGN
22195	HEART MEASURING SPOONS LARGE
22353	LUNCHBOX WITH CUTLERY FAIRY CAKES
48173C	DOOR MAT BLACK FLOCK
21755	LOVE BUILDING BLOCK WORD
21754	HOME BUILDING BLOCK WORD
84879	ASSORTED COLOUR BIRD ORNAMENT
22119	PEACE WOODEN BLOCK LETTERS
22142	CHRISTMAS CRAFT WHITE FAIRY
22296	HEART IVORY TRELLIS LARGE
22295	HEART FILIGREE DOVE LARGE
22109	FULL ENGLISH BREAKFAST PLATE
22107	PIZZA PLATE IN BOX
22194	BLACK DINER WALL CLOCK
35004B	SET OF 3 BLACK FLYING DUCKS
82582	AREA PATROLLED METAL SIGN
21181	PLEASE ONE PERSON METAL SIGN
21756	BATH BUILDING BLOCK WORD
21333	CLASSIC WHITE FRAME
84596F	SMALL MARSHMALLOWS PINK BOWL
84596L	BISCUITS SMALL BOWL LIGHT BLUE

Tabel Transaction_Detail

id_Invoice	StockCode	Price	Quantity
489434	85048	0.31597222	12
489434	79323P	0.30208333	12
489434	79323W	0.30208333	12
489434	22041	0.08402778	48
489434	21232	0.05902778	24
489434	22064	0.08680556	24
489434	21871	0.05902778	24
489434	21523	0.27430556	10
489435	22350	0.12152778	12
489435	22349	0.17708333	12
489435	22195	0.08680556	24
489435	22353	0.12152778	12
489436	48173C	0.27430556	10
489436	21755	0.23958333	18
489436	21754	0.27430556	3
489436	84879	0.08958333	16
489436	22119	0.31597222	3
489436	22142	0.07291667	12
489436	22296	0.08680556	12
489436	22295	0.08680556	12
489436	22109	0.15208333	16
489436	22107	0.17708333	4
489436	22194	0.33680556	2
489436	35004B	0.21180556	12
489436	82582	0.08402778	12
489436	21181	0.08402778	12
489436	21756	0.27430556	3
489436	21333	0.14930556	6
489436	84596F	0.05902778	8
489436	84596L	0.05902778	8

Tugas Besar Basis Data

RESULTS & DISCUSSIONS

Create/Show & Use Database

```
show databases;
use tubesuas;
```

DDL (Data Definition Language)

Tugas Besar Basis Data

RESULTS & DISCUSSIONS

Create Table Customer

```
CREATE TABLE IF NOT EXISTS Customer (
    id_customer INT NOT null,
    country VARCHAR(50),
    PRIMARY KEY (id_customer)
);
```

DDL (Data Definition Language)

Tugas Besar Basis Data

RESULTS & DISCUSSIONS

Create Table Item /barang

```
CREATE TABLE IF NOT EXISTS Item (
    stockcode VARCHAR(50) NOT null,
    description_ VARCHAR(100),
    PRIMARY KEY (stockcode)
);
```

DDL (Data Definition Language)

Tugas Besar Basis Data

RESULTS & DISCUSSIONS

Create Table Transaksi kemudian direlasikan dengan tabelcustomer

```
CREATE TABLE IF NOT EXISTS Transaction_ (
    id_invoice INT NOT null,
    id_customer INT NOT null,
    invoicedate DATETIME,
    PRIMARY KEY (id_invoice),
    FOREIGN KEY (id_customer) REFERENCES Customer (id_customer)
);
```

DDL (Data Definition Language)

Tugas Besar Basis Data

RESULTS & DISCUSSIONS

Create Tabel detail transaksi yang direlasikan dengan tabel transaksi dan item

```
CREATE TABLE IF NOT EXISTS Transaction_Detail (
    id_invoice INT NOT null,
    stockcode VARCHAR(50) NOT null,
    price DECIMAL(10,10),
    quantity INT,
    PRIMARY KEY (id_invoice, stockcode),
    FOREIGN KEY (id_invoice) REFERENCES Transaction_ (id_invoice),
    FOREIGN KEY (stockcode) REFERENCES Item (stockcode)
);
```

DDL (Data Definition Language)

Tugas Besar Basis Data

RESULTS & DISCUSSIONS

Memunculkan Table

```
DESC Customer;
DESC Transaction_;
DESC Transaction_Detail;
DESC Item;
```

DDL (Data Definition Language)

Tugas Besar Basis Data

RESULTS & DISCUSSIONS

Insert tabel customer

```
INSERT INTO Customer VALUES
(13085, 'United Kingdom'),
(13078, 'United Kingdom'),
(15362, 'United Kingdom');
SELECT * FROM Customer;
```

Implementasi syntax- DML (*Data Manipulation Language*)

Tugas Besar Basis Data

RESULTS & DISCUSSIONS

Insert tabel transaction:

```
(489434, 13085, '2009-12-01 07:45:00'),
(489435, 13085, '2009-12-01 07:46:00'),
(489436, 13078, '2009-12-01 09:06:00'),
(489437, 15362, '2009-12-01 09:08:00');
SELECT * FROM Transaction_;
```

Implementasi syntax- DML (*Data Manipulation Language*)

Tugas Besar Basis Data

RESULTS & DISCUSSIONS

Insert tabel item:

```
INSERT INTO Item VALUES
('85048', '15CM CHRISTMAS GLASS BALL 20 LIGHTS'),
('79323P', 'PINK CHERRY LIGHTS'),
('79323W', 'WHITE CHERRY LIGHTS'),
('22041', 'RECORD FRAME 7" SINGLE SIZE'),
('21232', 'STRAWBERRY CERAMIC TRINKET BOX'),
('22064', 'PINK DOUGHNUT TRINKET POT'),
('21871', 'SAVE THE PLANET MUG'),
('21523', 'FANCY FONT HOME SWEET HOME DOORMAT'),
('22350', 'CAT BOWL'),
('22349', 'DOG BOWL , CHASING BALL DESIGN'),
('22195', 'HEART MEASURING SPOONS LARGE'),
('22353', 'LUNCHBOX WITH CUTLERY FAIRY CAKES'),
('48173C', 'OOR MAT BLACK FLOCK'),
('21755', 'OVE BUILDING BLOCK WORD'),
('21754', 'OME BUILDING BLOCK WORD'),
('84879', 'SSORTED COLOUR BIRD ORNAMENT'),
('22119', 'PEACE WOODEN BLOCK LETTERS'),
('22142', 'CHRISTMAS CRAFT WHITE FAIRY'),
('22296', 'HEART IVORY TRELLIS LARGE'),
('22295', 'HEART FILIGREE DOVE LARGE'),
('22109', 'FULL ENGLISH BREAKFAST PLATE'),
('22107', 'PIZZA PLATE IN BOX'),
('22194', 'BLACK DINER WALL CLOCK'),
('35004B', 'SET OF 3 BLACK FLYING DUCKS'),
('82582', 'AREA PATROLLED METAL SIGN'),
('21181', 'PLEASE ONE PERSON  METAL SIGN'),
('21756', 'BATH BUILDING BLOCK WORD'),
('21333', 'CLASSIC WHITE FRAME'),
('84596F', 'SMALL MARSHMALLOWS PINK BOWL'),
('84596L', 'BISCUITS SMALL BOWL LIGHT BLUE'),
```

Implementasi syntax- DML

Tugas Besar Basis Data

RESULTS & DISCUSSIONS

Insert tabel transaction detail:

```
SET FOREIGN_KEY_CHECKS=0;
INSERT INTO Transaction_Detail VALUES
(489434, '85048', 0.315972222, 12),
(489434, '79323P', 0.302083333, 12),
(489434, '79323W', 0.302083333, 12),
(489434, '22041', 0.084027778, 48),
(489434, '21232', 0.059027778, 24),
(489434, '22064', 0.086805556, 24),
(489434, '21871', 0.059027778, 24),
(489434, '21523', 0.274305556, 10),
(489435, '22350', 0.121527778, 12),
(489435, '22349', 0.177083333, 12),
(489435, '22195', 0.086805556, 24),
(489435, '22353', 0.121527778, 12),
(489436, '48173C', 0.274305556, 10),
(489436, '21755', 0.239583333, 18),
(489436, '21754', 0.274305556, 3),
(489436, '84879', 0.089583333, 16),
(489436, '22119', 0.315972222, 3),
(489436, '22142', 0.072916667, 12),
(489436, '22296', 0.086805556, 12),
```

```
(489436, '22295', 0.086805556, 12),
(489436, '22109', 0.152083333, 16),
(489436, '22107', 0.177083333, 4),
(489436, '22194', 0.336805556, 2),
(489436, '35004', 0.211805556, 12),
(489436, '82582', 0.084027778, 12),
(489436, '21181', 0.084027778, 12),
(489436, '21756', 0.274305556, 3),
(489436, '21333', 0.149305556, 6),
(489436, '84596F', 0.059027778, 8),
(489436, '84596L', 0.059027778, 8);
SELECT * FROM Transaction_Detail;
```

Implementasi syntax- DML (*Data Manipulation Language*)

Tugas Besar Basis Data

RESULTS & DISCUSSIONS

Select tabel customer

```
57 •   insert into Customer values
58     (13085, 'United Kingdom'),
59     (13078, 'United Kingdom'),
60     (15362, 'United Kingdom');
61 •   select * from Customer;
```

Out put :

Result Grid | Filter Rows:

id_customer	country
13078	United Kingdom
13085	United Kingdom
15362	United Kingdom
NULL	NULL

Implementasi syntax- DML (*Data Manipulation Language*)

Tugas Besar Basis Data

RESULTS & DISCUSSIONS

Select tabel transaksi

```
63 •  insert into Transaction_ values
64    (489434, 13085, '2009-12-01 07:45:00'),
65    (489435, 13085, '2009-12-01 07:46:00'),
66    (489436, 13078, '2009-12-01 09:06:00'),
67    (489437, 15362, '2009-12-01 09:08:00');
68 •  select * from Transaction_;
```

Output :

Result Grid | Filter Rows: | Edit:

id_invoice	id_customer	invoicedate
489434	13085	2009-12-01 07:45:00
489435	13085	2009-12-01 07:46:00
489436	13078	2009-12-01 09:06:00
489437	15362	2009-12-01 09:08:00
NULL	NULL	NULL

Implementasi syntax- DML (*Data Manipulation Language*)

Tugas Besar Basis Data

RESULTS & DISCUSSIONS

Select tabel item

```
92      ('22107', 'PIZZA PLATE IN BOX'),
93      ('22194', 'BLACK DINER WALL CLOCK'),
94      ('35004B', 'SET OF 3 BLACK FLYING DUCKS'),
95      ('82582', 'AREA PATROLLED METAL SIGN'),
96      ('21181', 'PLEASE ONE PERSON  METAL SIGN'),
97      ('21756', 'BATH BUILDING BLOCK WORD'),
98      ('21333', 'CLASSIC WHITE FRAME'),
99      ('84596F', 'SMALL MARSHMALLOWS PINK BOWL'),
100     ('84596L', 'BISCUITS SMALL BOWL LIGHT BLUE');
101 •   select * from Item;
```

Output :

```
100     ('84596L', 'BISCUITS SMALL BOWL LIGHT BLUE');
101 •   select * from Item;
```

Result Grid | Filter Rows: | Edit:

stockcode	description_
21181	PLEASE ONE PERSON METAL SIGN
21232	STRAWBERRY CERAMIC TRINKET BOX
21333	CLASSIC WHITE FRAME
21523	FANCY FONT HOME SWEET HOME DOORMAT
21754	OME BUILDING BLOCK WORD

Item 12

Implementasi syntax- DML (*Data Manipulation Language*)

Tugas Besar Basis Data

RESULTS & DISCUSSIONS

Select tabel transaction detail

```
(489436, '22107', 0.177083333, 4),
(489436, '22194', 0.336805556, 2),
(489436, '35004', 0.211805556, 12),
(489436, '82582', 0.084027778, 12),
(489436, '21181', 0.084027778, 12),
(489436, '21756', 0.274305556, 3),
(489436, '21333', 0.149305556, 6),
(489436, '84596F', 0.059027778, 8),
(489436, '84596L', 0.059027778, 8);
select * from Transaction_Detail;
```

Output :

```
134     (489436, '84596L', 0.059027778, 8);
135 •   select * from Transaction_Detail;
136
```

Result Grid | Filter Rows: | Edit:

id_invoice	stockcode	price	quantity
489434	21232	0.0590277780	24
489434	21523	0.2743055560	10
489434	21871	0.0590277780	24
489434	22041	0.0840277780	48
489434	22064	0.0868055560	24
489434	79323P	0.3020833330	12
489434	79323W	0.3020833330	12
489434	85048	0.3159722220	12

Implementasi syntax- DML (*Data Manipulation Language*)

Tugas Besar Basis Data

RESULTS & DISCUSSIONS

Clause Functions

Advanced Query -Insight

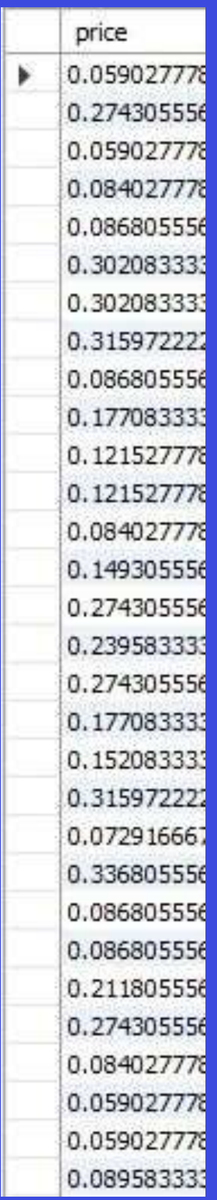
Query

Select…from…

Sintaks

```
select price from
Transaction_Detail;
```

Output



price
0.059027778
0.274305556
0.059027778
0.084027778
0.086805556
0.302083333
0.302083333
0.315972222
0.086805556
0.177083333
0.121527778
0.121527778
0.084027778
0.149305556
0.274305556
0.239583333
0.274305556
0.177083333
0.152083333
0.315972222
0.072916667
0.336805556
0.086805556
0.086805556
0.211805556
0.274305556
0.084027778
0.059027778
0.059027778
0.089583333

Tugas Besar Basis Data

RESULTS & DISCUSSIONS

Query

Select…from…where

Output

quantity	price
12	0.3020833330
12	0.3020833330
12	0.3159722220
12	0.1770833330
12	0.1215277780
12	0.1215277780
12	0.0840277780
12	0.0729166670
12	0.0868055560
12	0.0868055560
12	0.2118055560
12	0.0840277780

Clause Functions

Sintaks

```
select quantity, price from
Transaction_Detail where
quantity = 12;
```

Advanced Query -Insight

Tugas Besar Basis Data

RESULTS & DISCUSSIONS

Query

Operator (Distinct)

Clause Functions

Advanced Query -Insight

Sintaks

```
select distinct stockcode
from Item;
```

Output

stockcode
21181
21232
21333
21523
21754
21755
21756
21871
22041
22064
22107
22109
22119
22142
22194
22195
22295
22296
22349
22350
22353
35004B
48173C
79323P
79323W
82582
84596F
84596L
84879
85048
NULL

Tugas Besar Basis Data

RESULTS & DISCUSSIONS

Query

Operator (Between and)

Sintaks

```
select * from Transaction_
where invoicedate > '2009-12-01
00:00:00' and invoicedate <
'2010-12-01 00:00:00';
```

Clause Functions

Output

id_invoice	id_customer	invoicedate
489434	13085	2009-12-01 07:45:00
489435	13085	2009-12-01 07:46:00
489436	13078	2009-12-01 09:06:00
489437	15362	2009-12-01 09:08:00
NULL	NULL	NULL

Advanced Query -Insight

Tugas Besar Basis Data

RESULTS & DISCUSSIONS

Aggregation Functions

Advanced Query -Insight

Query

Count

Sintaks

```
select count(id_invoice),
quantity from
Transaction_Detail group by
quantity;
```

Output

count(id_invoice)	quantity
4	24
2	10
1	48
12	12
1	6
3	3
1	18
1	4
2	16
1	2
2	8

Tugas Besar Basis Data

RESULTS & DISCUSSIONS

Query

Sum

Sintaks

```
select sum(quantity), id_invoice
from Transaction_Detail group by
id_invoice;
```

Output

	sum(quantity)	id_invoice
▶	166	489434
	60	489435
	169	489436

Aggregation Functions

Advanced Query -Insight

Tugas Besar Basis Data

RESULTS & DISCUSSIONS

Query

Avg

Sintaks

```
select avg(quantity) from
Transaction_Detail;
```

Output

	avg(quantity)
▶	13.1667

Aggregation Functions

Advanced Query -Insight

Tugas Besar Basis Data

RESULTS & DISCUSSIONS

Solving Problem Statement

Advanced Query -Insight

Problem

Barang apa yang paling banyak dibeli dan paling sedikit dibeli dalam pasar daring oleh salah satu customer

Sintaks

```
select id_invoice, quantity,description_
from Transaction_Detail
inner join Item
using (stockcode)
order by quantity asc;

select id_invoice, quantity,description_
from Transaction_Detail
inner join Item
using (stockcode)
order by quantity desc;
```

Output

id_customer	description_	quantity
13078	BLACK DINER WALL CLOCK	2
13078	OME BUILDING BLOCK WORD	3
13078	PEACE WOODEN BLOCK LETTERS	3
13078	BATH BUILDING BLOCK WORD	3
13078	PIZZA PLATE IN BOX	4
13078	CLASSIC WHITE FRAME	6
13078	BISCUITS SMALL BOWL LIGHT BLUE	8
13078	SMALL MARSHMALLOWS PINK BOWL	8
13085	FANCY FONT HOME SWEET HOME DOORMAT	10
13078	OOR MAT BLACK FLOCK	10

id_customer	description_	quantity
13085	RECORD FRAME 7" SINGLE SIZE	48
13085	PINK DOUGHNUT TRINKET POT	24
13085	STRAWBERRY CERAMIC TRINKET BOX	24
13085	HEART MEASURING SPOONS LARGE	24
13085	SAVE THE PLANET MUG	24
13078	OVE BUILDING BLOCK WORD	18
13078	SSORTED COLOUR BIRD ORNAMENT	16
13078	FULL ENGLISH BREAKFAST PLATE	16
13078	PLEASE ONE PERSON METAL SIGN	12
13078	CHRISTMAS CRAFT WHITE FAIRY	12

Tugas Besar Basis Data

RESULTS & DISCUSSIONS

Problem

Berapa rata rata harga barang yang dibeli, rata- rata penjualan barang tiap item, dan total jumlah barang yang terjual

Sintaks

```
select avg(price)
from Transaction_Detail;

select avg(quantity) from
Transaction_Detail;

select sum(quantity)
from Transaction_Detail;
```

Solving Problem Statement

Output

	AVG(price)		sum(quantity)
▶	0.167268518666667	▶	395

Advanced Query -Insight

Tugas Besar Basis Data

RESULTS & DISCUSSIONS

Problem

Menghitung seberapa banyak barang yang dibeli customer(perorang)

Sintaks

```
select sum(quantity),
id_invoice from
Transaction_Detail
group by id_invoice;
```

Solving Problem Statement

Output

	sum(quantity)	id_invoice
▶	166	489434
	60	489435
	169	489436

Advanced Query -Insight

Tugas Besar Basis Data

RESULTS & DISCUSSIONS

Solving Problem Statement

Advanced Query -Insight

Problem

Menghitung banyak item yang dijual

Sintaks

```
select count(stockcode), description_ from Item group by description_;
```

Output

	count(stockcode)	description_
▶	1	PLEASE ONE PERSON METAL SIGN
	1	STRAWBERRY CERAMIC TRINKET BOX
	1	CLASSIC WHITE FRAME
	1	FANCY FONT HOME SWEET HOME DOORMAT
	1	OME BUILDING BLOCK WORD
	1	OVE BUILDING BLOCK WORD
	1	BATH BUILDING BLOCK WORD
	1	SAVE THE PLANET MUG
	1	RECORD FRAME 7" SINGLE SIZE
	1	PINK DOUGHNUT TRINKET POT
	1	PIZZA PLATE IN BOX
	1	FULL ENGLISH BREAKFAST PLATE
	1	PEACE WOODEN BLOCK LETTERS
	1	CHRISTMAS CRAFT WHITE FAIRY
	1	BLACK DINER WALL CLOCK
	1	HEART MEASURING SPOONS LARGE
	1	HEART FILIGREE DOVE LARGE
	1	HEART IVORY TRELLIS LARGE
	1	DOG BOWL , CHASING BALL DESIGN
	1	CAT BOWL
	1	LUNCHBOX WITH CUTLERY FAIRY CAKES
	1	SET OF 3 BLACK FLYING DUCKS
	1	OOR MAT BLACK FLOCK
	1	PINK CHERRY LIGHTS
	1	WHITE CHERRY LIGHTS
	1	AREA PATROLLED METAL SIGN
	1	SMALL MARSHMALLOWS PINK BOWL
	1	BISCUITS SMALL BOWL LIGHT BLUE
	1	SSORTED COLOUR BIRD ORNAMENT
	1	15CM CHRISTMAS GLASS BALL 20 LIGHTS

Tugas Besar Basis Data

RESULTS & DISCUSSIONS

Problem

Tampilan data terbaru setelah diolah menggunakan query SQL

Sintaks

```
select id_invoice, id_customer, country,
invoicedate, price, quantity, stockcode,
description_ from Transaction_Detail
inner join Item
using (stockcode)
inner join Transaction_
using (id_invoice)
inner join Customer using (id_customer)
order by quantity asc;
```

Output

id_invoice	id_customer	country	invoicedate	price	quantity	stockcode	description_
489436	13078	United Kingdom	2009-12-01 09:06:00	0.3368055560	2	22194	BLACK DINER WALL CLOCK
489436	13078	United Kingdom	2009-12-01 09:06:00	0.2743055560	3	21756	BATH BUILDING BLOCK WORD
489436	13078	United Kingdom	2009-12-01 09:06:00	0.2743055560	3	21754	OME BUILDING BLOCK WORD
489436	13078	United Kingdom	2009-12-01 09:06:00	0.3159722220	3	22119	PEACE WOODEN BLOCK LETTERS
489436	13078	United Kingdom	2009-12-01 09:06:00	0.1770833330	4	22107	PIZZA PLATE IN BOX
489436	13078	United Kingdom	2009-12-01 09:06:00	0.1493055560	6	21333	CLASSIC WHITE FRAME
489436	13078	United Kingdom	2009-12-01 09:06:00	0.0590277780	8	84596F	SMALL MARSHMALLOWS PINK BOWL
489436	13078	United Kingdom	2009-12-01 09:06:00	0.0590277780	8	84596L	BISCUITS SMALL BOWL LIGHT BLUE
489436	13078	United Kingdom	2009-12-01 09:06:00	0.2743055560	10	48173C	OOR MAT BLACK FLOCK
489434	13085	United Kingdom	2009-12-01 07:45:00	0.2743055560	10	21523	FANCY FONT HOME SWEET HOME DOORMAT
489436	13078	United Kingdom	2009-12-01 09:06:00	0.0840277780	12	21181	PLEASE ONE PERSON METAL SIGN
489436	13078	United Kingdom	2009-12-01 09:06:00	0.0729166670	12	22142	CHRISTMAS CRAFT WHITE FAIRY
489434	13085	United Kingdom	2009-12-01 07:45:00	0.3159722220	12	85048	15CM CHRISTMAS GLASS BALL 20 LIGHTS
489435	13085	United Kingdom	2009-12-01 07:46:00	0.1215277780	12	22353	LUNCHBOX WITH CUTLERY FAIRY CAKES
489436	13078	United Kingdom	2009-12-01 09:06:00	0.0840277780	12	82582	AREA PATROLLED METAL SIGN
489436	13078	United Kingdom	2009-12-01 09:06:00	0.0868055560	12	22295	HEART FILIGREE DOVE LARGE
489434	13085	United Kingdom	2009-12-01 07:45:00	0.3020833330	12	79323P	PINK CHERRY LIGHTS
489435	13085	United Kingdom	2009-12-01 07:46:00	0.1770833330	12	22349	DOG BOWL , CHASING BALL DESIGN
489436	13078	United Kingdom	2009-12-01 09:06:00	0.0868055560	12	22296	HEART IVORY TRELLIS LARGE
489434	13085	United Kingdom	2009-12-01 07:45:00	0.3020833330	12	79323W	WHITE CHERRY LIGHTS
489435	13085	United Kingdom	2009-12-01 07:46:00	0.1215277780	12	22350	CAT BOWL
489436	13078	United Kingdom	2009-12-01 09:06:00	0.0895833330	16	84879	SSORTED COLOUR BIRD ORNAMENT
489436	13078	United Kingdom	2009-12-01 09:06:00	0.1520833330	16	22109	FULL ENGLISH BREAKFAST PLATE

Solving Problem Statement

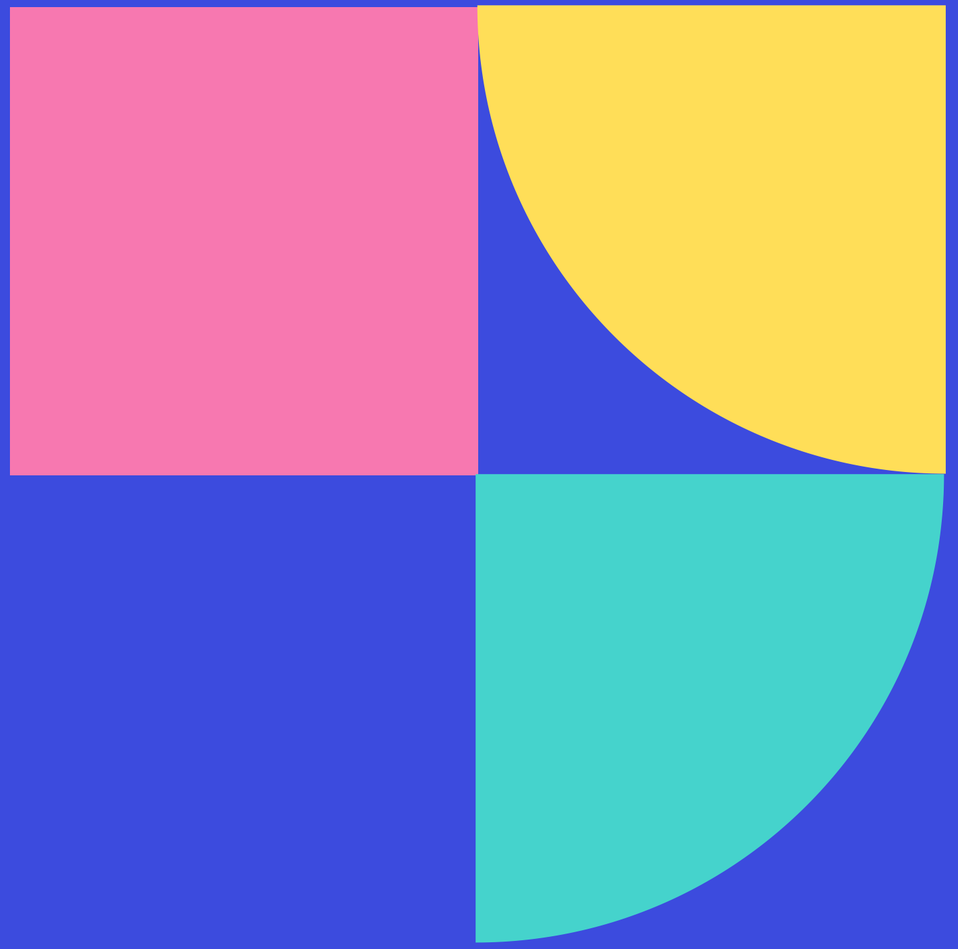
Advanced Query -Insight

Tugas Besar Basis Data

CONCLUSION

Dari data Transaksi Toko Ritel Online di Inggris, didapatkan insight setelah melakukan beberapa query pada sql data kami. Insight yang didapat yaitu:

- Barang yang paling banyak dibeli yaitu RECORD FRAME 7" SINGLE SIZE seharga 0,084027778 Pound Sterling dengan total pembelian 48 item dan dibeli oleh customer dengan id_customer 13085.
- Barang yang paling sedikit dibeli yaitu BLACK DINER WALL CLOCK seharga 0,336805556 Pound Sterling dengan total pembelian 2 item dan dibeli oleh customer dengan id_customer 15362.
- Rata- rata penjualan barang tiap item adalah 13,1667.
- Rata-rata harga barang yang dibeli adalah 0,167268518666667 Pound Sterling
- Total Item yang laku terjual sebanyak 395 item.
- Tiap orang dari daftar customer membeli dengan total barang:
    a. Customer 13085 sebanyak 166 item
    b. Customer 13078 sebanyak 60 item
    c. Customer 15362 sebanyak 69 item
- Banyak jumlah barang yang dijual adalah 30 item.

Dari insight ini dapat dikembangkan lagi menjadi lebih kompleks untuk mendukung usaha agar menjadi lebih baik kedepannya.

Thank You