Purchasing (Import DB Processing)

PORNPANSA	CHANLHA	6131501036
PASSAKORN	CHAIBAN	6131501043
JEAIRANAI	NUCHLUMYONG	6131501067
SUCHADA	WONGSRI	6131501068

BACHELOR OF ENGINEERING
COMPUTER ENGINEERING

SCHOOL OF INFORMATION TECHNOLOGY
MAE FAH LUANG UNIVERSITY
2020

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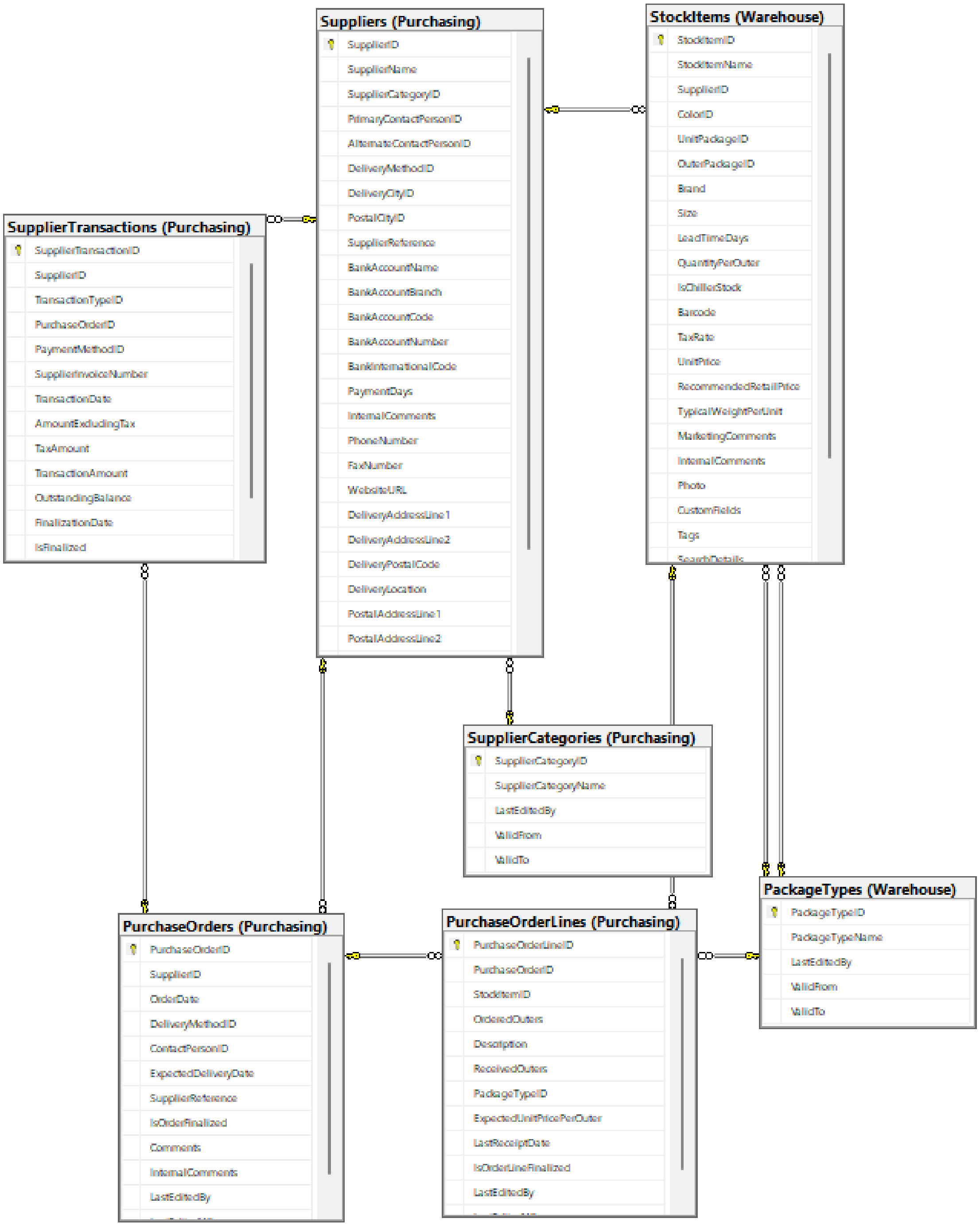
3. What was the total tax amount for each supplier category for all the years, quarters, months?

3. ER Diagram


Suppliers (Purchasing)
SupplierID
SupplierName
SupplierCategoryID
PrimaryContactPersonID
AlternateContactPersonID
DeliveryMethodID
DeliveryCityID
PostalCityID
SupplierReference
BankAccountName
BankAccountBranch
BankAccountCode
BankAccountNumber
BankInternationalCode
PaymentDays
InternalComments
PhoneNumber
FaxNumber
WebsiteURL
DeliveryAddressLine1
DeliveryAddressLine2
DeliveryPostalCode
DeliveryLocation
PostalAddressLine1
PostalAddressLine2
StockItems (Warehouse)
StockItemID
StockItemName
SupplierID
ColorID
UnitPackageID
OuterPackageID
Brand
Size
LeadTimeDays
QuantityPerOuter
IsChillerStock
Barcode
TaxRate
UnitPrice
RecommendedRetailPrice
TypicalWeightPerUnit
MarketingComments
InternalComments
Photo
CustomFields
Tags
SearchDetails
SupplierTransactions (Purchasing)
SupplierTransactionID
SupplierID
TransactionTypeID
PurchaseOrderID
PaymentMethodID
SupplierInvoiceNumber
TransactionDate
AmountExcludingTax
TaxAmount
TransactionAmount
OutstandingBalance
FinalizationDate
IsFinalized
SupplierCategories (Purchasing)
SupplierCategoryID
SupplierCategoryName
LastEditedBy
ValidFrom
ValidTo
PackageTypes (Warehouse)
PackageTypeID
PackageTypeName
LastEditedBy
ValidFrom
ValidTo
PurchaseOrders (Purchasing)
PurchaseOrderID
SupplierID
OrderDate
DeliveryMethodID
ContactPersonID
ExpectedDeliveryDate
SupplierReference
IsOrderFinalized
Comments
InternalComments
LastEditedBy
PurchaseOrderLines (Purchasing)
PurchaseOrderLineID
PurchaseOrderID
StockItemID
OrderedOuters
Description
ReceivedOuters
PackageTypeID
ExpectedUnitPricePerOuter
LastReceiptDate
IsOrderLineFinalized
LastEditedBy

4. Information Package Diagram

Information Subject: Purchasing

Dimensions:

Supplier	**Stock Item**	**Package Types**
SupplierID	StockitemID	Package TypesID
SupplierName	StockitemName	Package TypesName
Fact/Measures: total received outer		

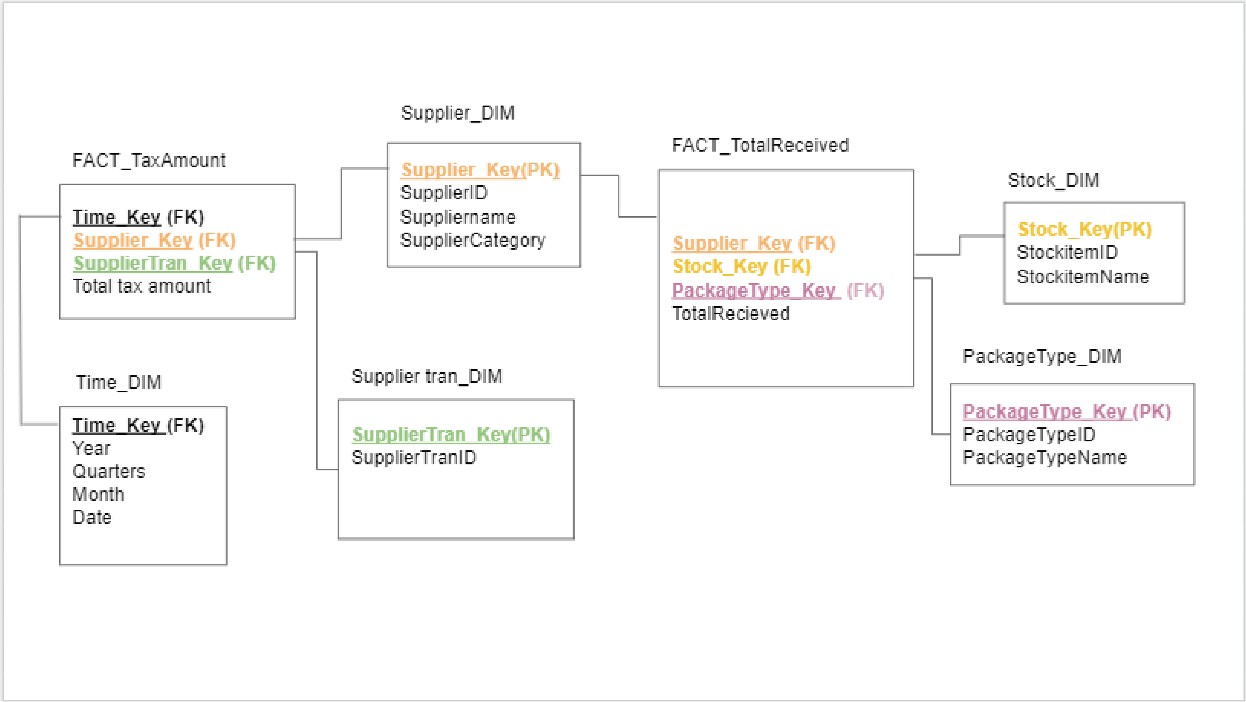
Dimensions:

Time	**Supplier**	**SupplierTran**
Year	SupplierID	SupplierTranID
Quarters	SupplierName	
Month	SupplierCategory	
Date		
Fact/Measures: total tax amount		

5. Bus Matrix

Measures	Time	SupplierTran	Supplier	Stock Item	Package Type
Total received outer			▨	▨	▨
Total tax amount	▨	▨	▨		

6. DW Schema



7. ETL Analysis

Source-to-Target Mapping Table for Time_DIM

Dimensions	Data Source Table	Source Attributes	Transformation Logic/Join Condition
Time_Key	-	Surractation	-
Years	-	SYSDATETIME()	datepart(year,SYSDATETIME())
Quarters	-	SYSDATETIME()	datepart(qq,SYSDATETIME())
Months	-	SYSDATETIME()	datename(month,SYSDATETIME())
Calendar_Date	-	SYSDATETIME()	datepart(d, SYSDATETIME())

Source-to-Target Mapping Table for Supplier_DIM

Dimensions	Data Source Table	Source Attributes	Transformation Logic/Join Condition
Supplier_Key	-	Surractation	-
SupplierID	Suppliers	SupplierID	-
Suppliername	Suppliers	SupplierName	-
Suppliercategory	SuppliersCategories	SupplierCategoryName	Suppliers.SuppliierCategoryID = SuppliersCategories.SuppliierCategoryID

Source-to-Target Mapping Table for SupplierTran_DIM

Dimensions	Data Source Table	Source Attributes	Transformation Logic/Join Condition
SupplierTran_DIM	-	Surracation	-
SupplierTranID	SupplierTransections	SupplierTransectionID	-

Source-to-Target Mapping Table for Package_DIM

Dimensions	Data Source Table	Source Attributes	Transformation Logic/Join Condition
PackageType_Key	-	Surracation	-
PackageTypeID	PackageTypes	PackageTypeID	-
PackageTypeName	PackageTypes	PackageTypeName	-

Source-to-Target Mapping Table for Stock_DIM

Dimensions	Data Source Table	Source Attributes	Transformation Logic/Join Condition
Stock_Key	-	Surracation	-
StockitemID	StockItem	StockItemID	-
StockitemName	StockItem	StockItemName	-

Source-to-Target Mapping Table for FACT_TaxAmount

Dimensions	**Data Source Table**	**Source Attributes**	**Transformation Logic/Join Condition**
Time_Key	TIME_DIM	TIME_KEY	Time_DIM.Carlendar_Date = SupplierTransactions.TransactionDate
SupplierTran_Key	SupplierTran_DIM	SupplierTran_Key	SupplierTransactions.SupplierTransactionID = SupplierTran_DIM.SupplierTranID
Supplier_Key	Supplier_DIM	Supplier_Key	s.SupplierID=Supplier_DIM.SupplierID

Total_Tax_Amount			SELECT SUM(st.TaxAmount),st.TransactionDate, s.SupplierID,st.SupplierTransactionId
			FROM SupplierTransactions st, Suppliers s
			WHERE st.supplierID = s.supplierID
			GROUP BY st.TransactionDate, s.SupplierID,st SupplierTransactionID

PS.
s stand for **Suppliers**
st stand for **SupplierTransactions**

Source-to-Target Mapping Table for FACT_TotalReceived

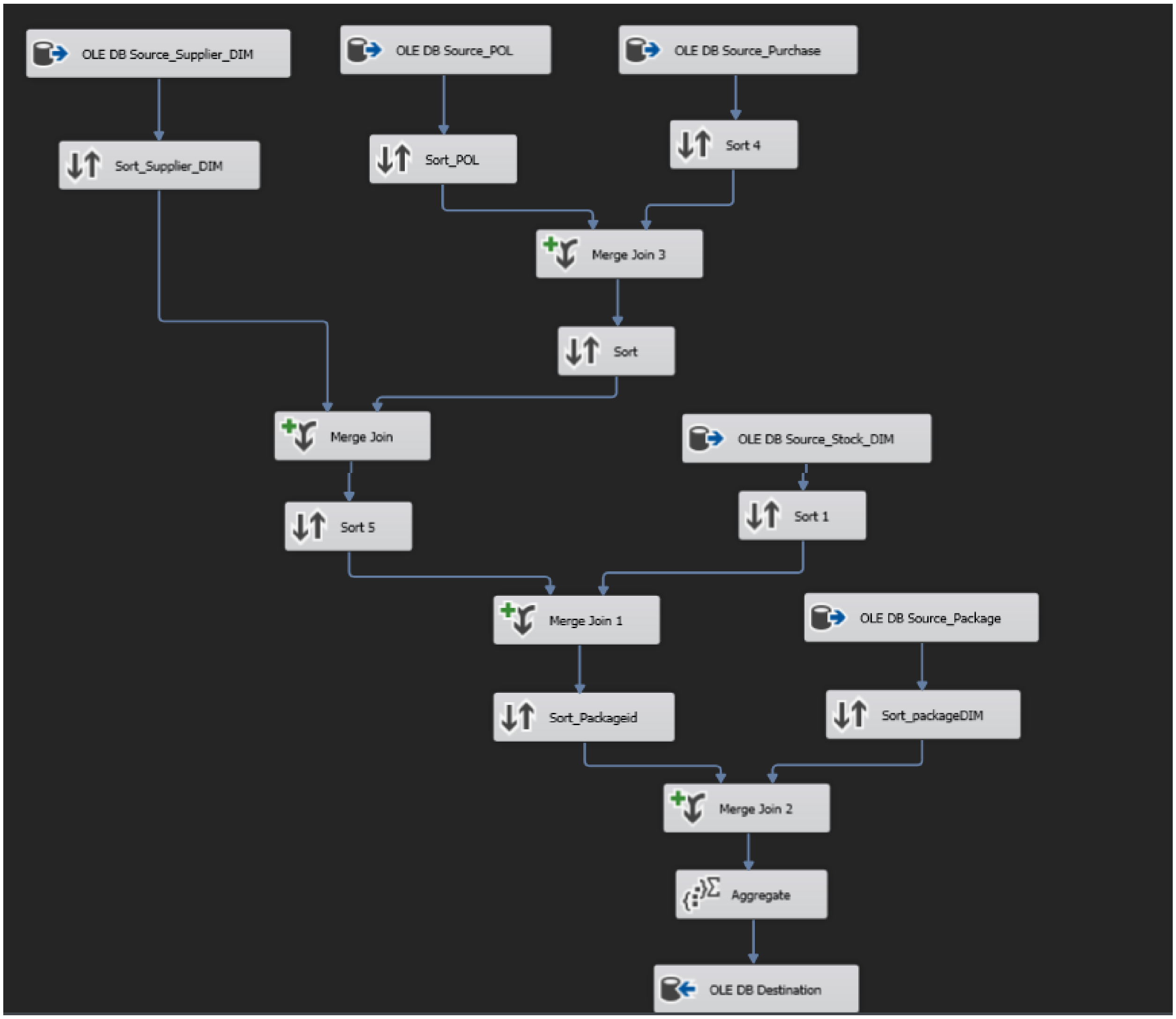
Dimensions	**Data Source Table**	**Source Attributes**	**Transformation Logic/Join Condition**
Supplier_Key	Supplier_DIM	Supplier_Key	SELECT s.SupplierID = Supplier_DIM.SuplierID
Stock_Key	Stock_DIM	Stock_Key	SELECT si.StockItemID=Stock_dim.StockItemKey
Package_Key	Package_Dim	Package_Key	SELECT p.PackageTypeID=Package_Dim.PackageID

TotalRecieved			SELECT SUM(pol.RecivedOuters),s.SupplierID,si.StockItemID,p.PackageTypeID
			FROM PuchaseOrderLines pol, StockItems si,,PackgeTypes p,Suppliers s
			WHERE pol.PackageTypeID = p.PackageTypeID AND pol.StockItemID = si.StockItemID AND si.SupplierID = s.SupplierID
			GROUP BY si.StockItemID,p.PackageTypeID,s.SupplierID

PS.
s stand for **SupplierS**
si stand for **StockItems**
p stand for **PackageTypes**
pol stand for **PurchaseOrderLines**

8.ETL Package

8.1 Task_FACT_Total Received



OLE DB Source_Supplier_DIM = Import information from database by connection manager to **localhost.importDB_dw** and use name of the table **[dbo].[Supplier_DIM]** to know **Business Questions** as asked.

Sort_Supplier_DIM = Link with **OLE DB Source_Supplier_DIM** input columns by **SupplierID** and have sort type as **ascending** to sort data in columns.

OLE DB Source_POL = Import information from database by connection manager to **localhost.importDB** and use name of the table **[Purchasing].[PurchasOrderLines]** to know **Business Questions** as asked.

Sort_POL = Link with **OLE DB Source_POL** input columns by **PurchaseOrderID** and have sort type as **ascending** to sort data in columns.

OLE DB Source_Purchase = Import information from database by connection manager to **localhost.importDB** and use name of the table **[Purchasing].[PurchaseOrders]** to know **Business Questions** as asked.

Sort 4 = Link with **OLE DB Source_Purchase** input columns by **PurchaseOrderID** and have sort type as **ascending** to sort data in columns.

Merge Join 3 = Link with **Sort 4, Sort_POL** join two sources between **sort_POL, sort 4** and have input columns are **StockitemsID, SupplierID, PackageTypeID, ReceivedOuters** use join type **inner join** to configure properties of sorted data.

Sort = Link with **Merge Join 3** input columns by **SupplierID** and have sort type as **ascending** to sort data in columns.

Merge Join = Link with **Sort_Supplier_DIM, Sort** join two sources between **sort, sort_supplier_DIM** and have input columns are **StockitemsID, PackageTypeID, ReceivedOuters, Supplier_Key** use join type **inner join** to configure properties of sorted data.

Sort 5 = Link with **Merge Join** input columns by **StockitemID** and have sort type as **ascending** to sort data in columns.

OLE DB Source_Stock_DIM = Import information from database by connection manager to **localhost.importDB_dw** and use name of the table **[dbo].[Stock_DIM]** to know **Business Questions** as asked.

Sort 1 = Link with **OLE DB Source_Stock_DIM** input columns by **StockitemID** and have sort type as **ascending** to sort data in columns.

Merge Join 1 = Link with **Sort1, Sort 5** join two sources between **sort 1, sort 5** and have input columns are **Stock_Key, PackageTypeID, ReceivedOuters, Supplier_Key** use join type **inner join** to configure properties of sorted data.

Sort_Packageid = Link with **Merge Join 1** input columns by **PackageTypeID** and have sort type as **ascending** to sort data in columns.

OLE DB Source_Package = Import information from database by connection manager to **localhost.importDB_dw** and use name of the table **[dbo].[Package_DIM]** to know **Business Questions** as asked.

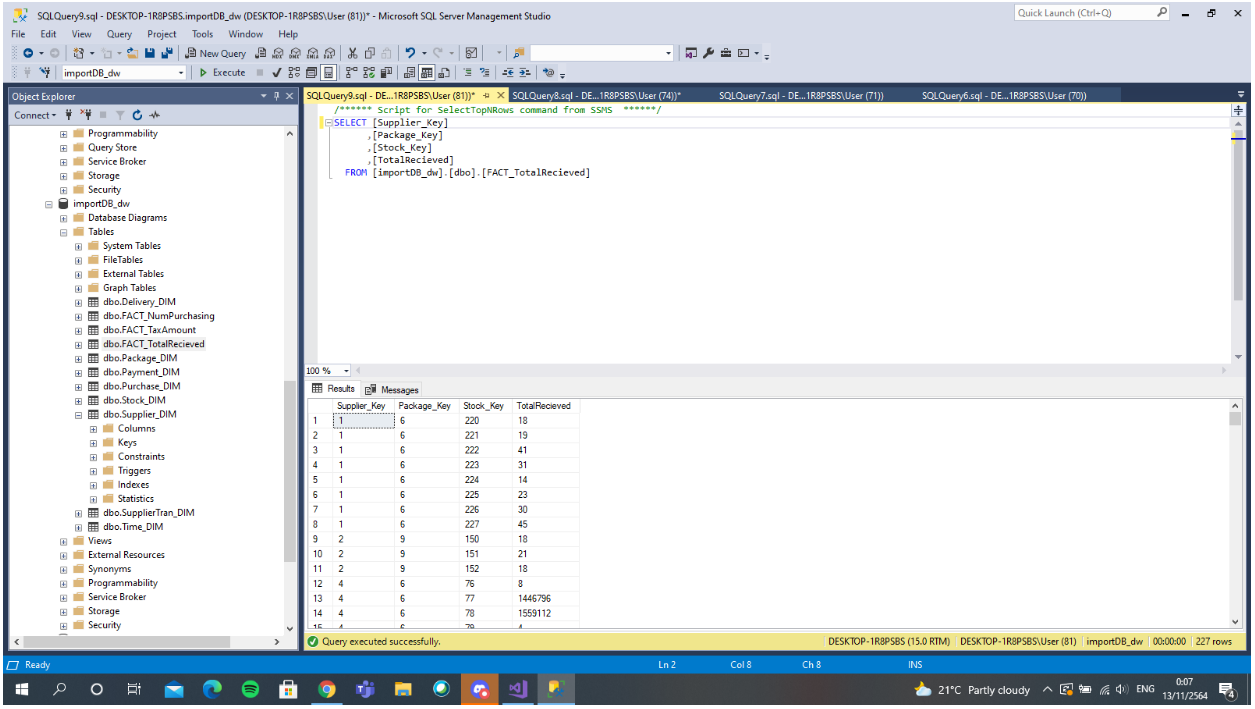
Sort_packageDIM = Link with **OLE DB Source_Package** input columns by **PackageID** and have sort type as **ascending** to sort data in columns.

Merge join 2 = Link with **Sort_packageDIM, Sort_Packageid** join two sources between **Sort_packageDIM, Sort_Packageid** and have input columns are **package_Key, Stock_Key, ReceivedOuters, Supplier_Key** use join type **inner join** to configure properties of sorted data.

Aggregate = Have input columns are **Package_Key, Stock_Key, ReceivedOuters, Supplier_Key** all input columns use operation **Group by** except **ReceivedOuters** use **Sum** for perform group by operations and calculate the aggregate value of data.

OLE DB Destination = Link with **Aggregate** to export all data sources view of information from database to another target database by connection manager to **localhost.importDB_dw** and use name of the table **[dbo].[FACT_TotalReceived]** to know **Business Questions** as asked.

Result of FACT_TotalReceived



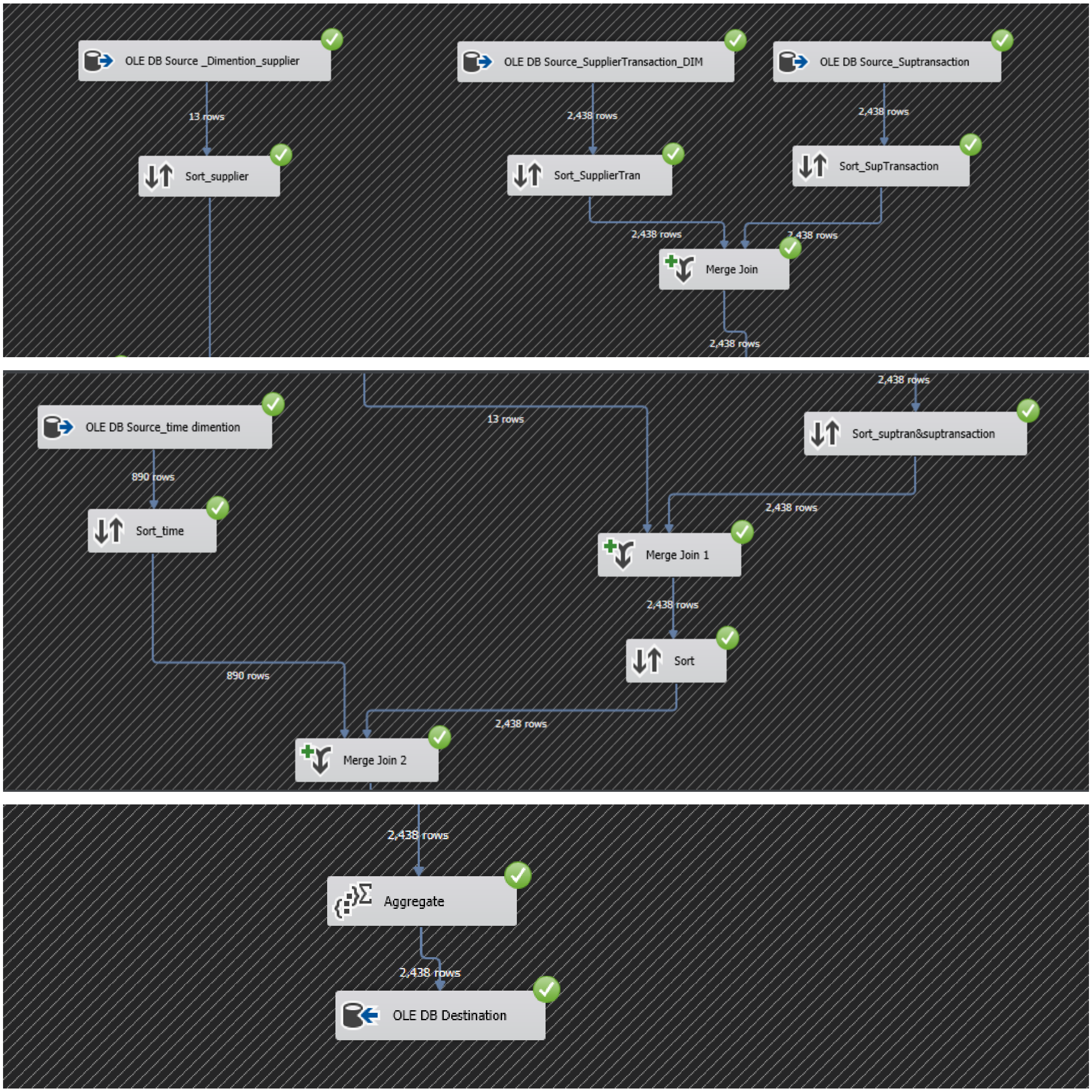
```
/****** Script for SelectTopNRows command from SSMS  ******/
SELECT [Supplier_Key]
      ,[Package_Key]
      ,[Stock_Key]
      ,[TotalRecieved]
  FROM [importDB_dw].[dbo].[FACT_TotalRecieved]
```

	Supplier_Key	Package_Key	Stock_Key	TotalRecieved
1	1	6	220	18
2	1	6	221	19
3	1	6	222	41
4	1	6	223	31
5	1	6	224	14
6	1	6	225	23
7	1	6	226	30
8	1	6	227	45
9	2	9	150	18
10	2	9	151	21
11	2	9	152	18
12	4	6	76	8
13	4	6	77	1446796
14	4	6	78	1559112
15	4	6	79	4

Query executed successfully. DESKTOP-1R8PSBS (15.0 RTM) | DESKTOP-1R8PSBS\User (81) | importDB_dw | 00:00:00 | 227 rows

The result information is 227 rows.

8.2 Task_FACT_TaxAmount



OLE DB Source_Dimention_supplier = Import information from database by connection manager to **localhost.importDB_dw** and use name of the table **[dbo].[Supplier_DIM]** to know **Business Questions** as asked.

Sort_supplier = Link with **OLE DB Source_Dimention_supplier** input columns by **SupplierID** and have sort type as **ascending** to sort data in columns.

OLE DB_Source_SupplierTransaction_DIM = Import information from database by connection manager to **localhost.importDB_dw** and use name of the table **[dbo].[SupplierTran_DIM]** to know **Business Questions** as asked.

Sort_SupplierTran = Link with **OLE DB_Source_SupplierTransaction_DIM** input columns by **SupplerTranID** and have sort type as **ascending** to sort data in columns.

OLE DB Source_Suptransaction = Import information from database by connection manager to **localhost.ImportDB** and use name of the table **[Purchasing].[SupplierTransactions]** to want to know **Business Questions** as asked.

Sort_SupTransaction = Link with **OLE DB_Source_SupplierTransaction_DIM** input columns by **SupplerTranID** and have sort type as **ascending** to sort data in columns.

Merge Join = Link with **Sort_SupplierTran, Sort_Suptransaction** join two sources between **Sort_SupplierTran, Sort_Suptransaction** and have input columns are **SupplierTran_Key, TaxAmount, TransactionDate, SupplierID** use join type **inner join** to configure properties of sorted data.

Sort_suptran&suptransaction = Link with **Merge Join** input columns by **SupplierID** and have sort type as **ascending** to sort data in columns.

Merge Join 1 = Link with **Sort_Supplier, Sort_suptran&suptransaction** join two sources between **Sort_Supplier, Sort_suptran&suptransaction** and have input columns are **Supplier_Key, SupplierTran_Key, TaxAmount, TransactionDate** use join type **inner join** to configure properties of sorted data.

Sort = Link with **Merge Join 1** input columns by **TransactionDate** and have sort type as **ascending** to sort data in columns.

OLE DB Source_time dimention = Import information from database by connection manager to **localhost.importDB_dw** and use name of the table **[dbo].[Time_DIM]** to direct time by **Business Questions** as asked.

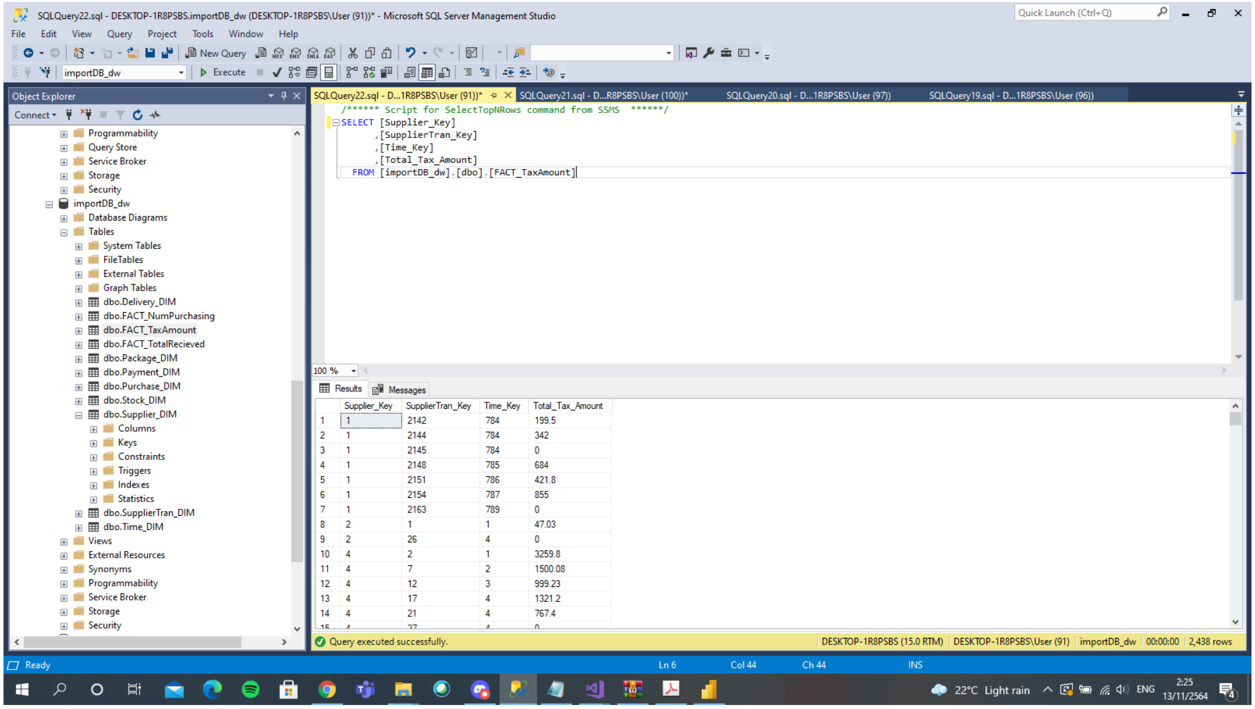
Sort_time = Link with **OLE DB Source_time dimention** input columns by **Carlendar_Date** and have sort type as **ascending** to sort data in columns.

Merge Join 2 = Link with **Sort, Sort_time** join two sources between **Sort, Sort_time** and have input columns are **Time_Key, TaxAmount, SupplierTran_Key, Supplier_Key** use join type **inner join** to configure properties of sorted data.

Aggregate = Have input columns are **Time_Key, TaxAmount,SupplierTran_Key, Supplier_Key** all input columns use operation **Group by** except **TaxAmount** use **Sum** for perform group by operations and calculate the aggregate value of data

OLE DB Destination = Link with **Aggregate** to export all data sources view of information from database to another target database by connection manager to **localhost.importDB_dw** and use name of the table **[dbo].[FACT_TaxAmount]** to know **Business Questions** as asked.

Result of FACT_TaxAmount



```
/****** Script for SelectTopNRows command from SSMS  ******/
SELECT [Supplier_Key]
      ,[SupplierTran_Key]
      ,[Time_Key]
      ,[Total_Tax_Amount]
  FROM [importDB_dw].[dbo].[FACT_TaxAmount]
```

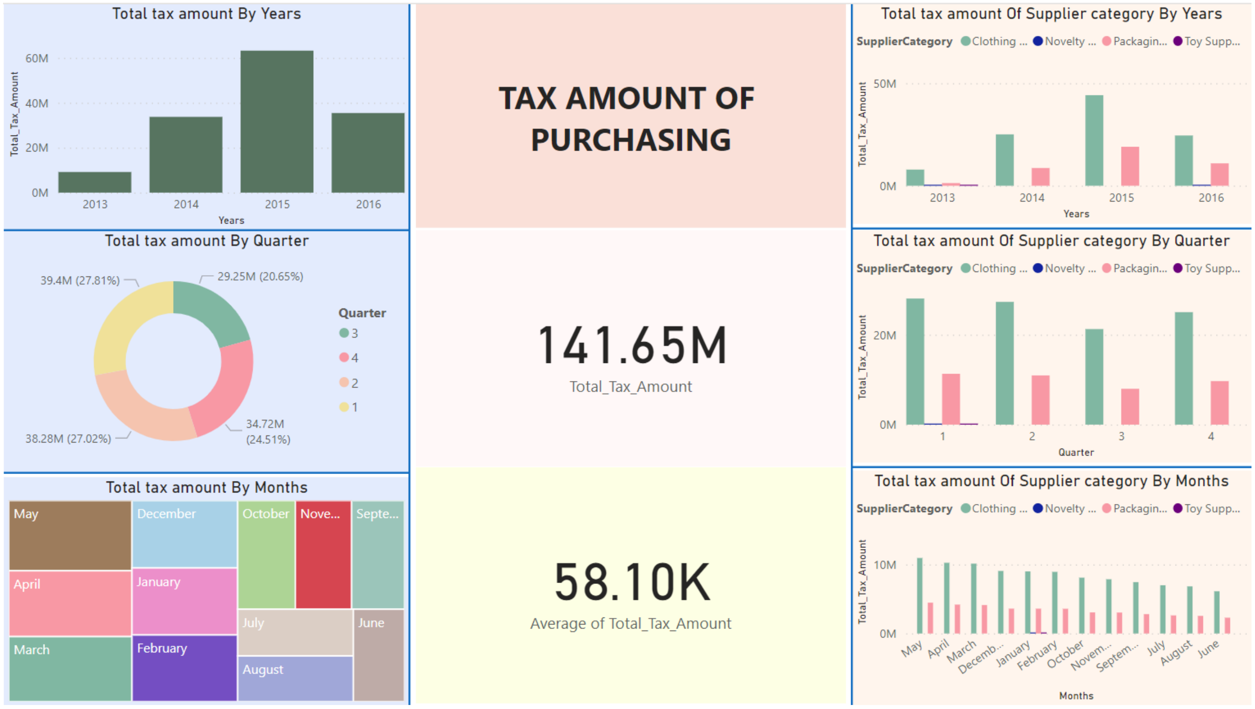
	Supplier_Key	SupplierTran_Key	Time_Key	Total_Tax_Amount
1	1	2142	784	199.5
2	1	2144	784	342
3	1	2145	784	0
4	1	2148	785	684
5	1	2151	786	421.8
6	1	2154	787	855
7	1	2163	789	0
8	2	1	1	47.03
9	2	26	4	0
10	4	2	1	3259.8
11	4	7	2	1500.08
12	4	12	3	999.23
13	4	17	4	1321.2
14	4	21	4	767.4
15	4	27	4	0

Query executed successfully. | DESKTOP-1R8PSBS (15.0 RTM) | DESKTOP-1R8PSBS\User (91) | importDB_dw | 00:00:00 | 2,438 rows

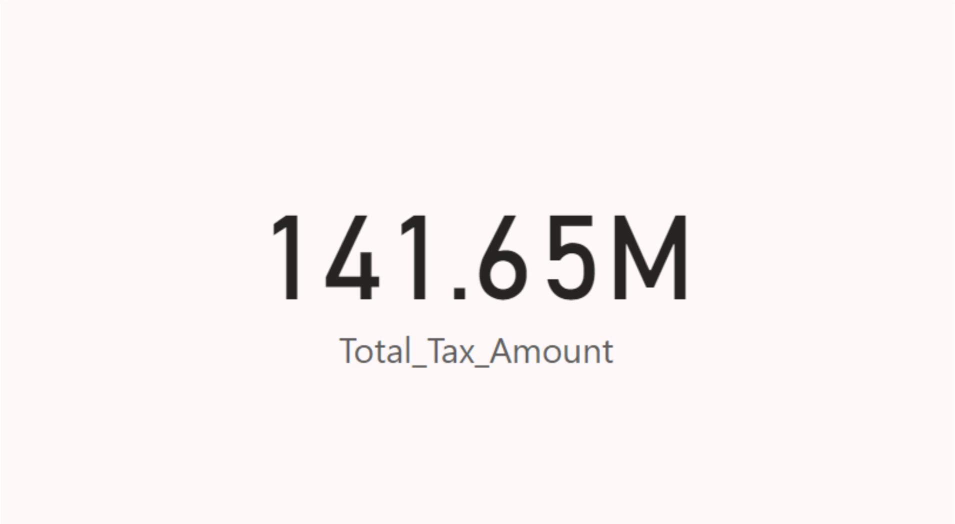
The result information is 2,438 rows.

9.Dashboard

9.1 Information based on the tax amount



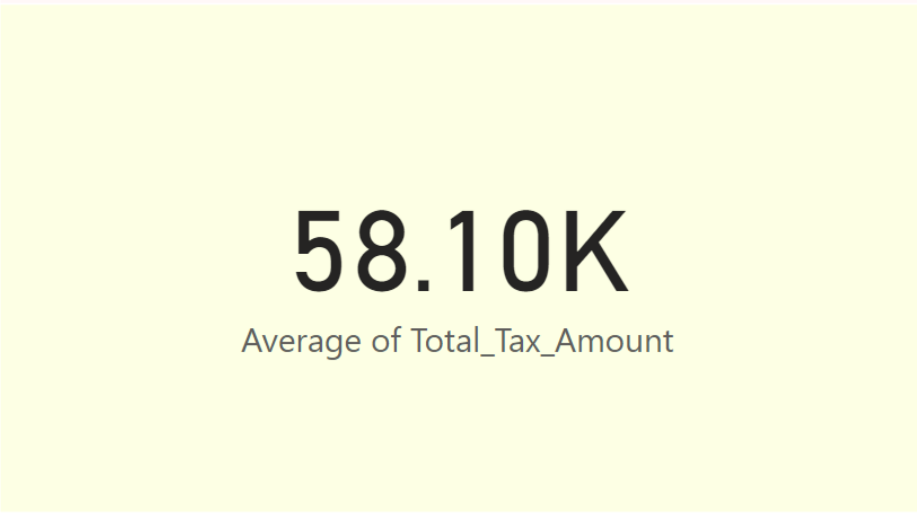
1. Show the total tax amount



141.65M

Total_Tax_Amount

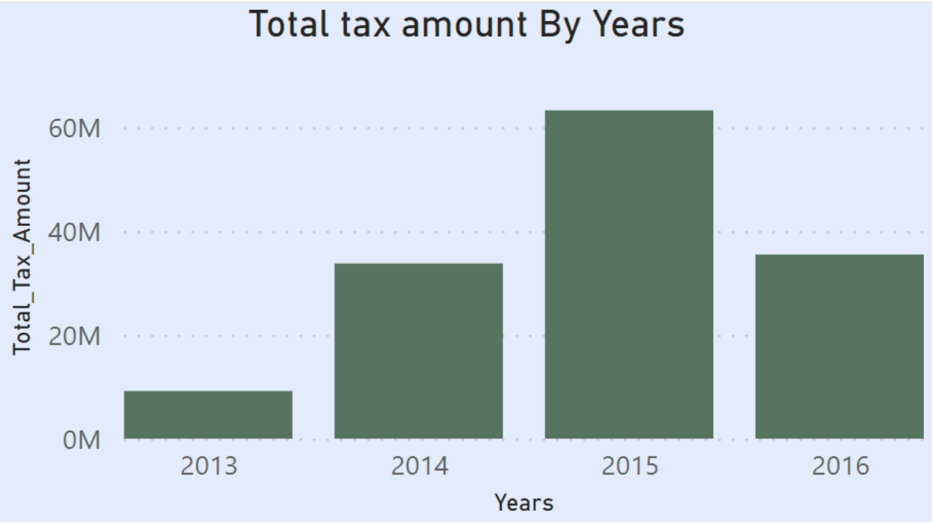
2 Show the average of the total tax amount



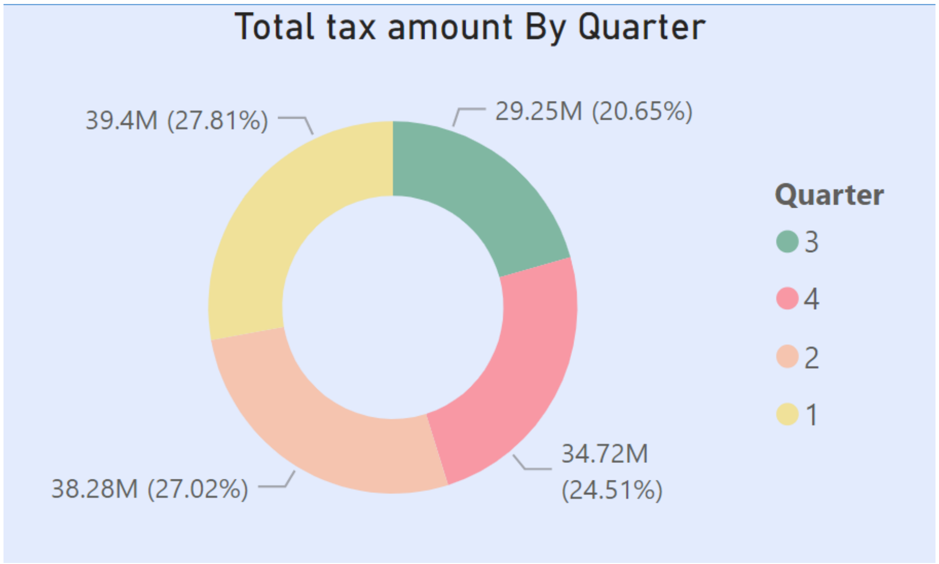
58.10K

Average of Total_Tax_Amount

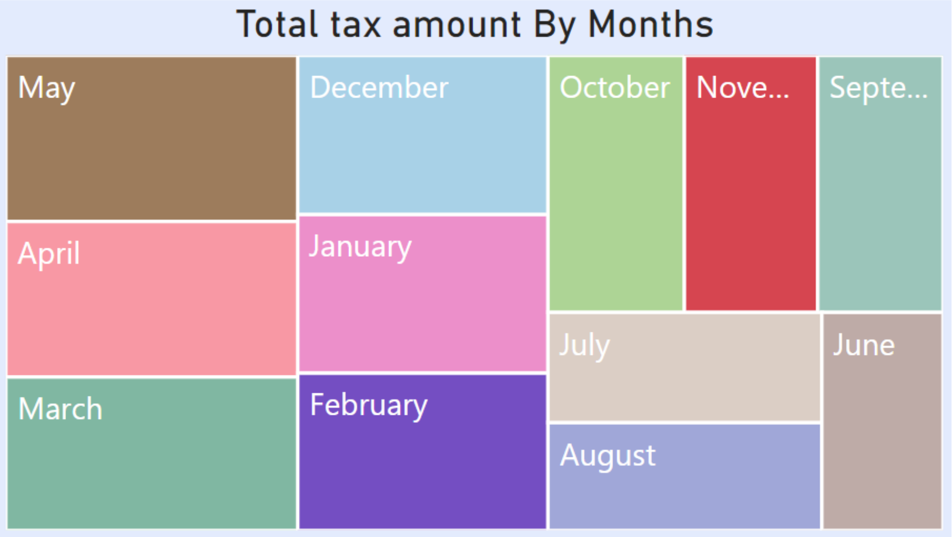
3 Show the total tax amount for all the years



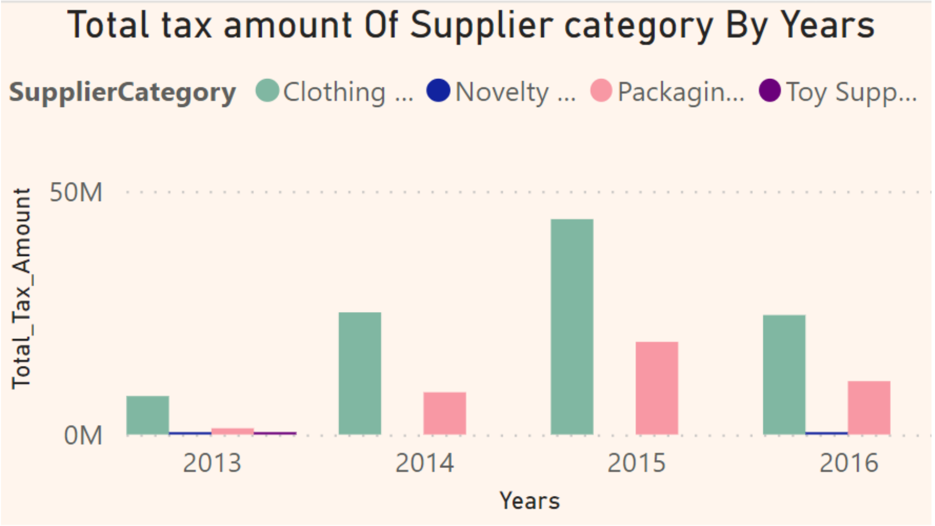
4 Show the total tax amount for all the quarters.



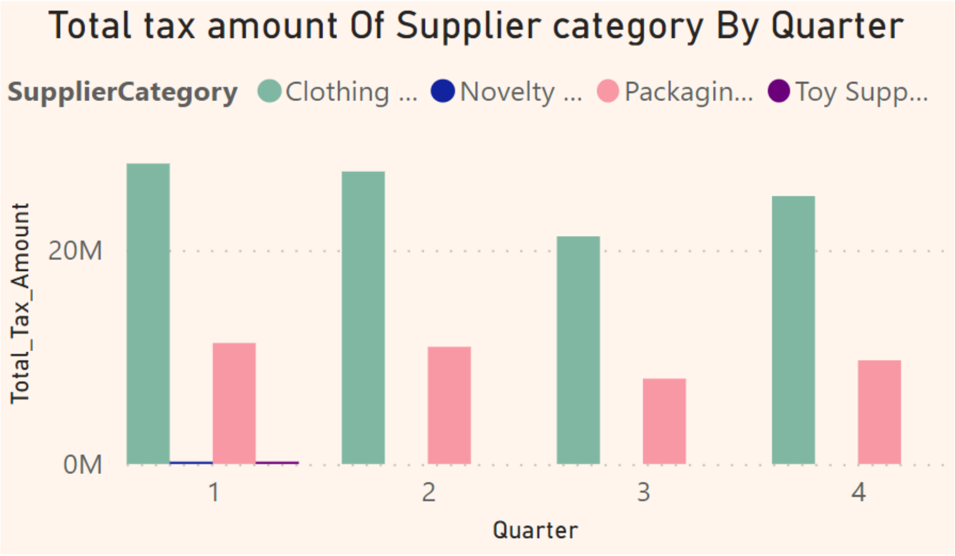
5 Show total tax amount for all the month.



6 Show the total tax amount for each supplier category for all the Years.

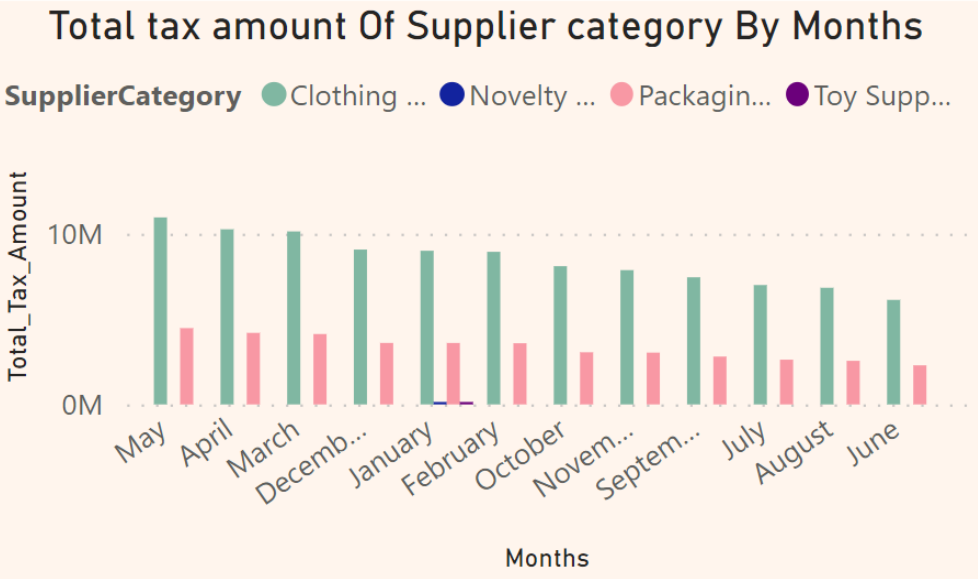


7 Show the total tax amount for each supplier category for all the Quarters.

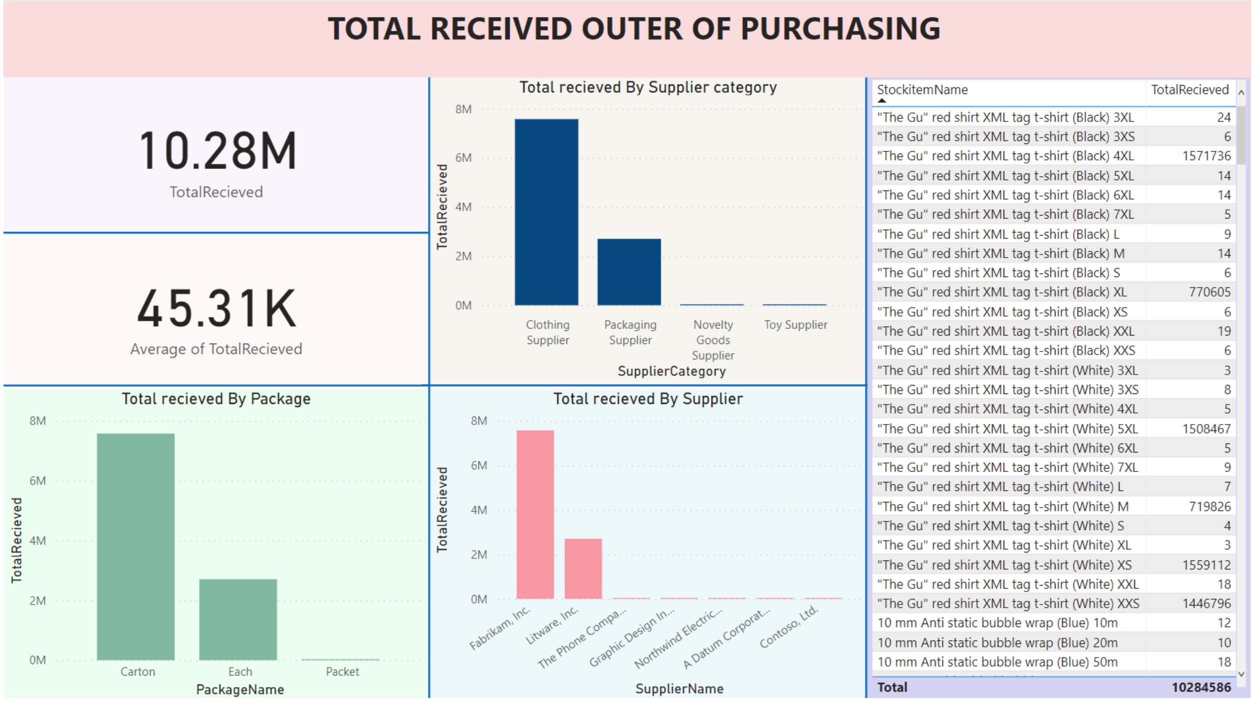


8 Show the total tax amount for each supplier category for all the Month

.



9.2 Information based on the total received outer.



TOTAL RECEIVED OUTER OF PURCHASING

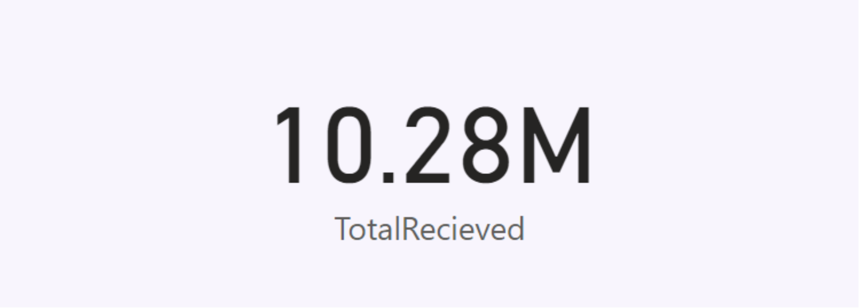
10.28M
TotalRecieved

45.31K
Average of TotalRecieved

StockitemName	TotalRecieved
"The Gu" red shirt XML tag t-shirt (Black) 3XL	24
"The Gu" red shirt XML tag t-shirt (Black) 3XS	6
"The Gu" red shirt XML tag t-shirt (Black) 4XL	1571736
"The Gu" red shirt XML tag t-shirt (Black) 5XL	14
"The Gu" red shirt XML tag t-shirt (Black) 6XL	14
"The Gu" red shirt XML tag t-shirt (Black) 7XL	5
"The Gu" red shirt XML tag t-shirt (Black) L	9
"The Gu" red shirt XML tag t-shirt (Black) M	14
"The Gu" red shirt XML tag t-shirt (Black) S	6
"The Gu" red shirt XML tag t-shirt (Black) XL	770605
"The Gu" red shirt XML tag t-shirt (Black) XS	6
"The Gu" red shirt XML tag t-shirt (Black) XXL	19
"The Gu" red shirt XML tag t-shirt (Black) XXS	6
"The Gu" red shirt XML tag t-shirt (White) 3XL	3
"The Gu" red shirt XML tag t-shirt (White) 3XS	8
"The Gu" red shirt XML tag t-shirt (White) 4XL	5
"The Gu" red shirt XML tag t-shirt (White) 5XL	1508467
"The Gu" red shirt XML tag t-shirt (White) 6XL	5
"The Gu" red shirt XML tag t-shirt (White) 7XL	9
"The Gu" red shirt XML tag t-shirt (White) L	7
"The Gu" red shirt XML tag t-shirt (White) M	719826
"The Gu" red shirt XML tag t-shirt (White) S	4
"The Gu" red shirt XML tag t-shirt (White) XL	3
"The Gu" red shirt XML tag t-shirt (White) XS	1559112
"The Gu" red shirt XML tag t-shirt (White) XXL	18
"The Gu" red shirt XML tag t-shirt (White) XXS	1446796
10 mm Anti static bubble wrap (Blue) 10m	12
10 mm Anti static bubble wrap (Blue) 20m	10
10 mm Anti static bubble wrap (Blue) 50m	18
Total	**10284586**

2.1 Show the total received outer

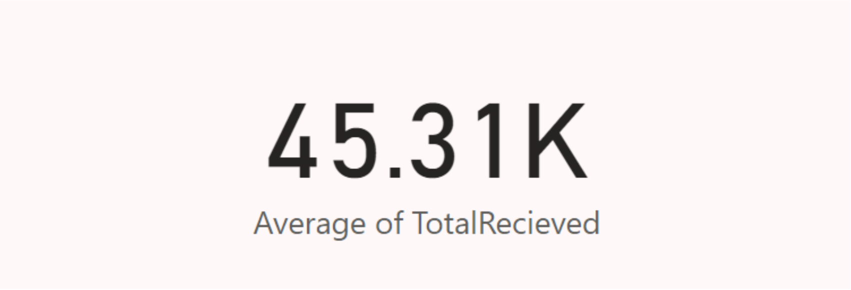
.



10.28M

TotalRecieved

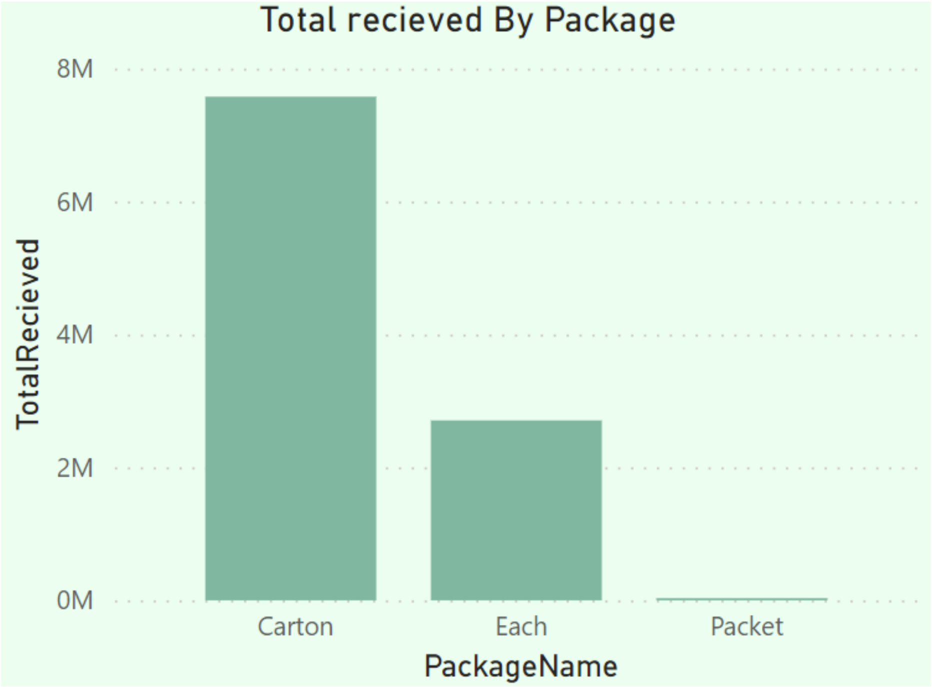
2.2 Show average of total received outer



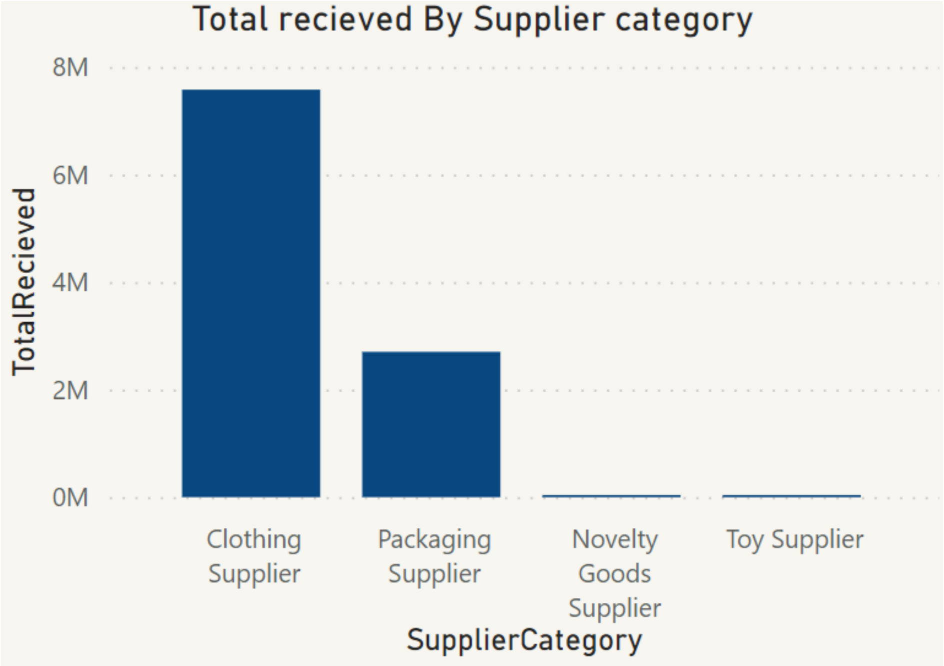
45.31K

Average of TotalRecieved

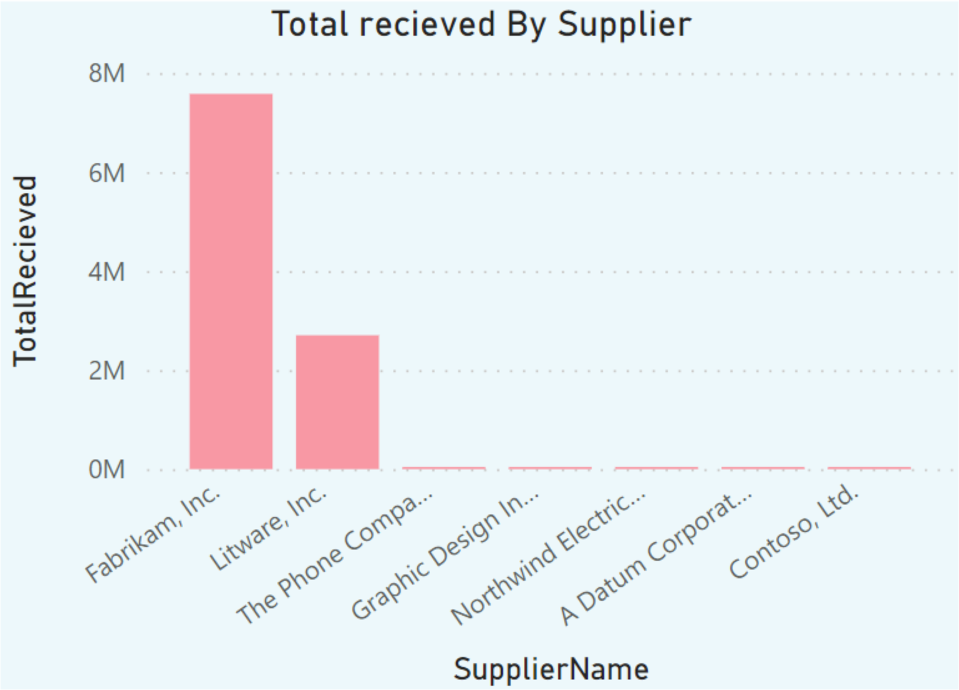
2.3 Show the total received outer in each package type.



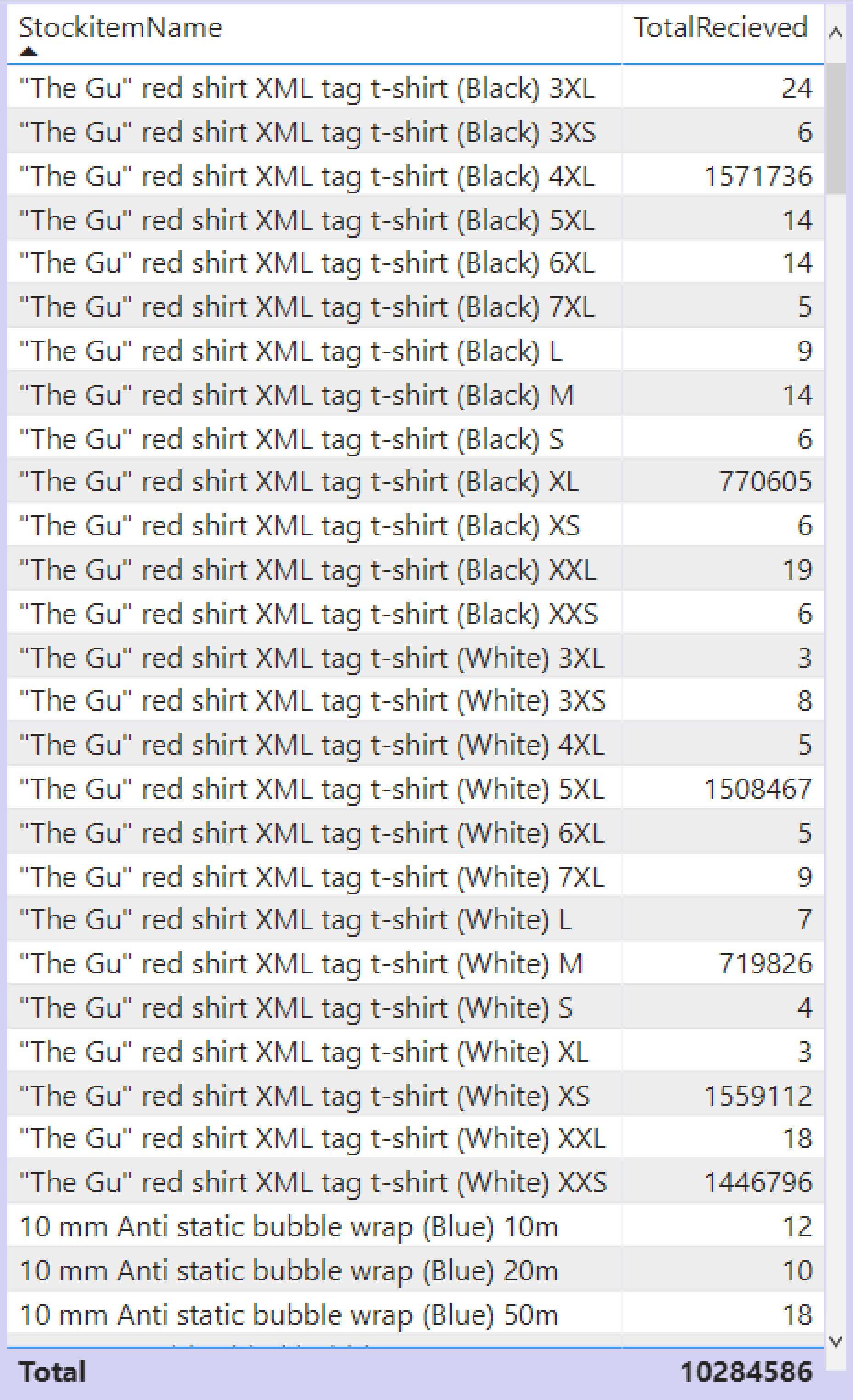
2.4 Show the total received outer in supplier category.



2.4 Show the total received outer in supplier



2.4 Show the total received outer in each stock item.



StockitemName	TotalRecieved
"The Gu" red shirt XML tag t-shirt (Black) 3XL	24
"The Gu" red shirt XML tag t-shirt (Black) 3XS	6
"The Gu" red shirt XML tag t-shirt (Black) 4XL	1571736
"The Gu" red shirt XML tag t-shirt (Black) 5XL	14
"The Gu" red shirt XML tag t-shirt (Black) 6XL	14
"The Gu" red shirt XML tag t-shirt (Black) 7XL	5
"The Gu" red shirt XML tag t-shirt (Black) L	9
"The Gu" red shirt XML tag t-shirt (Black) M	14
"The Gu" red shirt XML tag t-shirt (Black) S	6
"The Gu" red shirt XML tag t-shirt (Black) XL	770605
"The Gu" red shirt XML tag t-shirt (Black) XS	6
"The Gu" red shirt XML tag t-shirt (Black) XXL	19
"The Gu" red shirt XML tag t-shirt (Black) XXS	6
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"The Gu" red shirt XML tag t-shirt (White) 3XS	8
"The Gu" red shirt XML tag t-shirt (White) 4XL	5
"The Gu" red shirt XML tag t-shirt (White) 5XL	1508467
"The Gu" red shirt XML tag t-shirt (White) 6XL	5
"The Gu" red shirt XML tag t-shirt (White) 7XL	9
"The Gu" red shirt XML tag t-shirt (White) L	7
"The Gu" red shirt XML tag t-shirt (White) M	719826
"The Gu" red shirt XML tag t-shirt (White) S	4
"The Gu" red shirt XML tag t-shirt (White) XL	3
"The Gu" red shirt XML tag t-shirt (White) XS	1559112
"The Gu" red shirt XML tag t-shirt (White) XXL	18
"The Gu" red shirt XML tag t-shirt (White) XXS	1446796
10 mm Anti static bubble wrap (Blue) 10m	12
10 mm Anti static bubble wrap (Blue) 20m	10
10 mm Anti static bubble wrap (Blue) 50m	18
Total	**10284586**