1) Creating a new table and inputting data

```
-- Create new table with appropriate data types
create table dataset_product_sales_project (
Order_ID int,
Order_Date date,
Customer_Name varchar(50),
City varchar(50),
State varchar(50),
Region varchar(50),
Country varchar(50),
Category varchar(50),
Sub_Category varchar(50),
Product_Name varchar(50),
Quantity int,
Unit_Price decimal(25,2),
Revenue decimal(25,2),
Profit decimal(25,2));


--Input data into new table
insert into dataset_product_sales_project (Order_ID, Order_Date, Customer_Name, City, State, Region,
Country, Category, Sub_Category, Product_Name, Quantity, Unit_Price, Revenue, Profit)
select
cast (Order_ID as int),
cast (Order_Date as date),
Customer_Name,
City,
State,
Region,
Country,
Category,
Sub_Category,
Product_Name,
cast (Quantity as int),
cast (Unit_Price as decimal(25,2)),
cast (Revenue as decimal(25,2)),
cast (Profit as decimal(25,2))
    from product_sales_dataset_final;
```

2) Data normalisation

```
create table DimProduct(
    Product_ID INT IDENTITY(1,1),
    Product_Name NVARCHAR(50),
    Sub_Category NVARCHAR(50),
    Category NVARCHAR(50)
);

insert into DimProduct (Product_Name,Sub_Category,Category)
select distinct Product_Name,Sub_Category,Category
from dataset_product_sales_project;


create table DimRegion(
    City_ID INT IDENTITY(1,1),
    City NVARCHAR(50),
    State NVARCHAR(50),
    Region NVARCHAR(50),
    Country NVARCHAR(50)
);

insert into DimRegion (City,State,Region,Country)
select distinct City,State,Region,Country
from dataset_product_sales_project;

create table FactSales_new2(
    Order_ID int, Order_Date date, Customer_Name varchar(50), City_ID int, Product_ID int,
    Quantity int, Unit_Price decimal(25,2), Revenue decimal(25,2), Profit decimal(25,2));

insert into FactSales_new2 (Order_ID,
Order_Date,
Customer_Name,
City_ID,
Product_ID,
Quantity,
Unit_Price,
Revenue,
Profit)
select d.Order_ID,
d.Order_Date,
d.Customer_Name,
r.City_ID,
p.Product_ID,
d.Quantity,
d.Unit_Price,
d.Revenue,
d.Profit
from dataset_product_sales_project d
join DimProduct p on d.Product_Name = p.Product_Name
    and d.Sub_Category = p.Sub_Category
    and d.Category = p.Category
join DimRegion r on d.Country = r.Country
    and d.City = r.City;
```

3) Complex calculation which required aggregation

```sql
WITH purchase_times AS (
    SELECT
        Customer_Name,
        COUNT(DISTINCT City) AS Distinct_City_Count
    FROM dataset_product_sales_project
    WHERE Order_Year = '2024'
    GROUP BY Customer_Name
)
SELECT
    CASE
        WHEN Distinct_City_Count = 1 THEN '1'
        WHEN Distinct_City_Count = 2 THEN '2'
        WHEN Distinct_City_Count = 3 THEN '3'
        WHEN Distinct_City_Count = 4 THEN '4'
        WHEN Distinct_City_Count = 5 THEN '5'
        ELSE '6+'
    END AS City_Group,
    COUNT(DISTINCT Customer_Name) AS Customer_Count
FROM purchase_times
GROUP BY
    CASE
        WHEN Distinct_City_Count = 1 THEN '1'
        WHEN Distinct_City_Count = 2 THEN '2'
        WHEN Distinct_City_Count = 3 THEN '3'
        WHEN Distinct_City_Count = 4 THEN '4'
        WHEN Distinct_City_Count = 5 THEN '5'
        ELSE '6+'
    END
ORDER BY
    MIN(Distinct_City_Count);
```