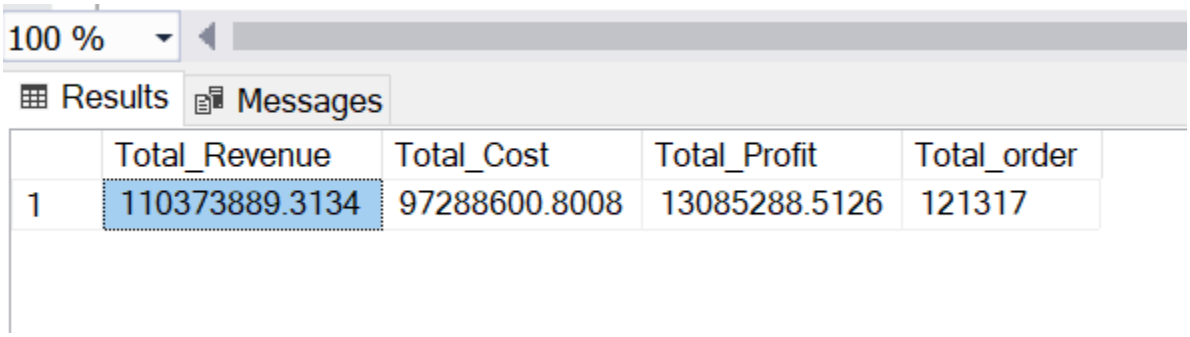
DATA EXPLORATION AND ANALYSIS

```sql
-- 1. calculate total revenue , cost, profit, number of order

SELECT
       SUM(UnitPrice*OrderQty) as Total_Revenue,
          SUM(Cost * OrderQty) as Total_Cost,
          (SUM(UnitPrice*OrderQty) - SUM(Cost * OrderQty)) AS Total_Profit,
          COUNT(*) AS Total_order
FROM #SALEFINAL ;
```



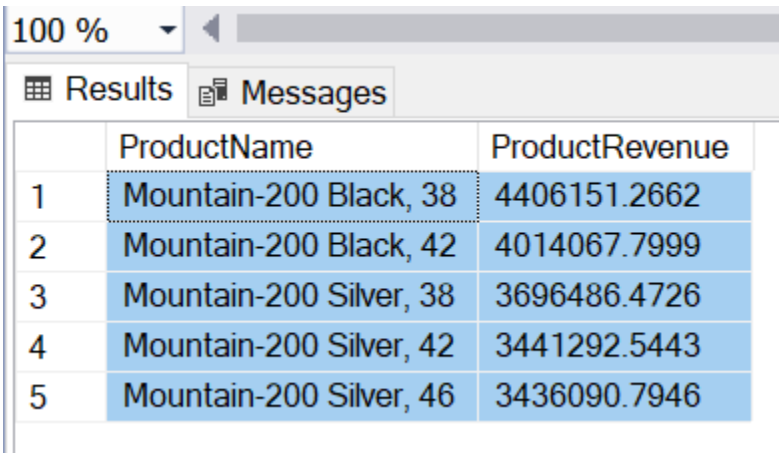
100 %

Results | Messages

	Total_Revenue	Total_Cost	Total_Profit	Total_order
1	110373889.3134	97288600.8008	13085288.5126	121317

```sql
-- 2. top 5 products have highest revenue?

SELECT      top 5 p.ProductName,
            SUM(s.UnitPrice*s.OrderQty) AS ProductRevenue
  FROM      #SALEFINAL as s
  JOIN      #PRODUCT as p
    ON      s.ProductID = p.ProductID
GROUP BY    p.ProductName
ORDER BY    ProductRevenue DESC;
```



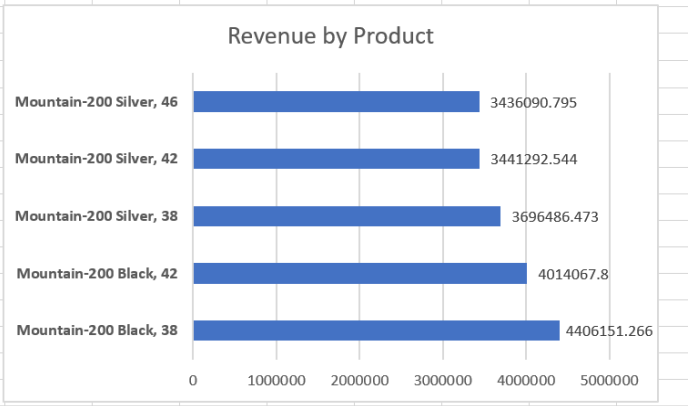
100 %

Results | Messages

	ProductName	ProductRevenue
1	Mountain-200 Black, 38	4406151.2662
2	Mountain-200 Black, 42	4014067.7999
3	Mountain-200 Silver, 38	3696486.4726
4	Mountain-200 Silver, 42	3441292.5443
5	Mountain-200 Silver, 46	3436090.7946

Top 5 revenue by products

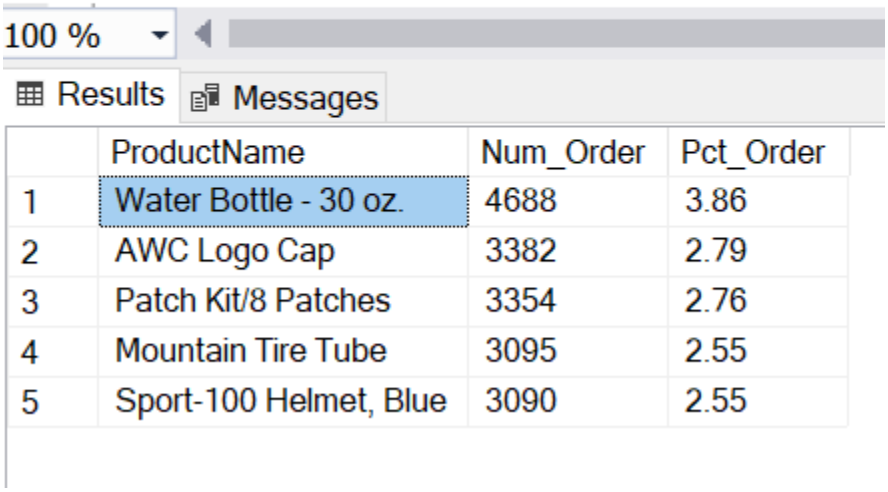
Product	Revenue	Percentage
Mountain-200 Black, 38	4406151.266	4%
Mountain-200 Black, 42	4014067.8	4%
Mountain-200 Silver, 38	3696486.473	3%
Mountain-200 Silver, 42	3441292.544	3%
Mountain-200 Silver, 46	3436090.795	3%
	1899408888%	**17%**



Insights : 5 products (total 266 products) above attribute 17% of total Revenue.

```sql
--3. Top 5 orders by product ?

SELECT    top 5 p.ProductName,
          COUNT(s.SalesOrderDetailID) as Num_Order,
               ROUND(CAST(COUNT(s.SalesOrderDetailID) AS float) / (SELECT COUNT(*) FROM
#SALEFINAL) *100,2) AS Pct_Order
  FROM    #SALEFINAL as s
  JOIN    #PRODUCT as p
    ON    s.ProductID = p.ProductID
GROUP BY  p.ProductName
ORDER BY  Num_Order DESC;
```



	ProductName	Num_Order	Pct_Order
1	Water Bottle - 30 oz.	4688	3.86
2	AWC Logo Cap	3382	2.79
3	Patch Kit/8 Patches	3354	2.76
4	Mountain Tire Tube	3095	2.55
5	Sport-100 Helmet, Blue	3090	2.55

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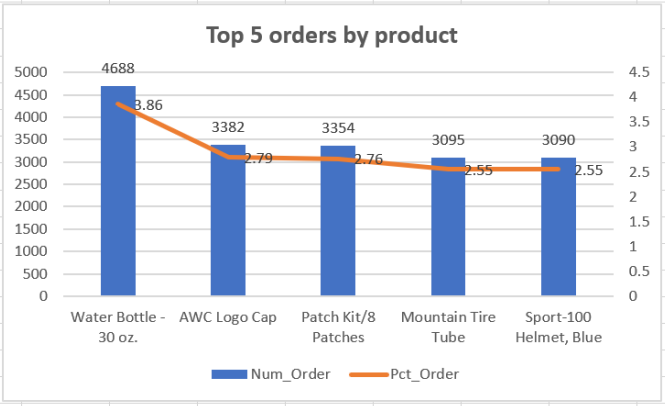
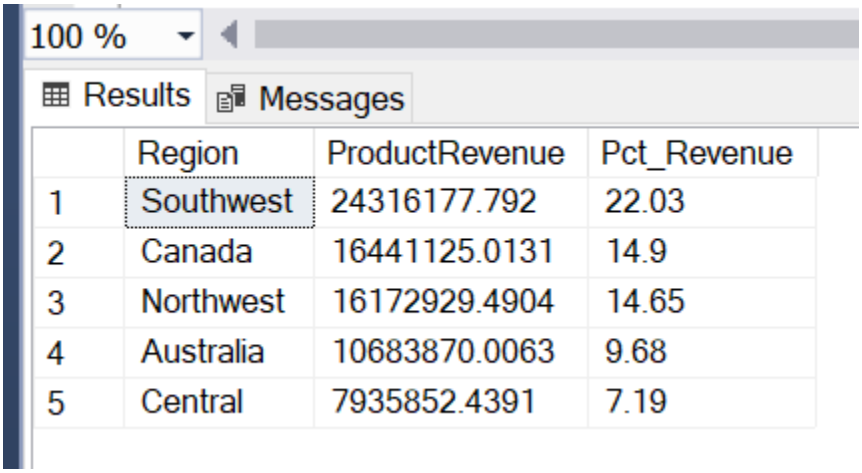
	17609	**14.51**



Insights : We have 5 products contribute total 14.5% total orders. So we can have plan to increase production volume of these products.

```
--4. Region has highest revenue?

SELECT      top 5 t.Name AS Region,
            SUM(s.UnitPrice*s.OrderQty) AS ProductRevenue,
                  ROUND(CAST(SUM(s.UnitPrice*s.OrderQty) AS FLOAT)/(SELECT
SUM(UnitPrice*OrderQty) FROM #SALEFINAL)*100,2) AS Pct_Revenue
  FROM      #SALEFINAL as s
  JOIN      #TERRITORY as t
    ON      s.TerritoryID=t.TerritoryID
  GROUP BY t.Name
  ORDER BY ProductRevenue DESC;
```



	Region	ProductRevenue	Pct_Revenue
1	Southwest	24316177.792	22.03
2	Canada	16441125.0131	14.9
3	Northwest	16172929.4904	14.65
4	Australia	10683870.0063	9.68
5	Central	7935852.4391	7.19

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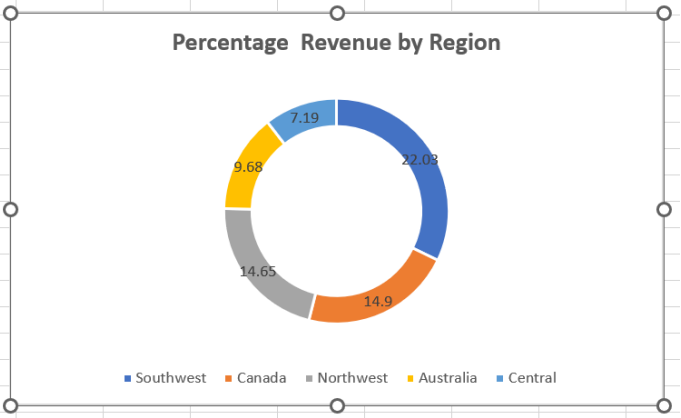


Insight: US is the highest market , follow by Canada. So totally of North America occupy 50% of total revenue.

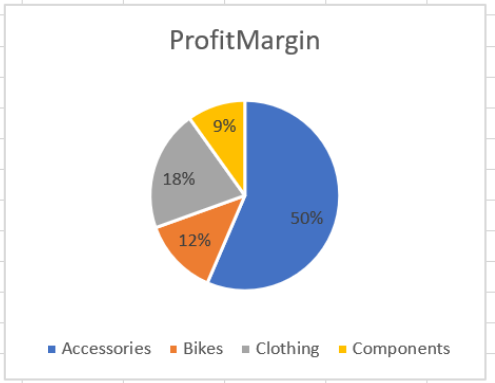
```sql
-- 5. Show the profit margin of each Product Category

SELECT    p.ProductCategoryName,
          SUM(s.UnitPrice*s.OrderQty) AS Revenue,
          SUM(s.OrderQty*s.Cost) AS Cost,
          (SUM(s.UnitPrice*s.OrderQty)-SUM(s.OrderQty*s.Cost)) /
SUM(s.UnitPrice*s.OrderQty)    AS ProfitMargin
  FROM    #SALEFINAL as s
  JOIN    #PRODUCT as p
    ON    s.ProductID = p.ProductID
GROUP BY  p.ProductCategoryName;
```

100 %

Results | Messages

	ProductCategoryName	Revenue	Cost	ProfitMargin
1	Accessories	1278760.9125	637601.0385	0.5013
2	Bikes	95145813.3519	84131887.7555	0.1157
3	Clothing	2141507.0245	1750636.2931	0.1825
4	Components	11807808.0245	10768475.7137	0.088

ProductCategoryName	Revenue	Cost	ProfitMargin
Accessories	1278760.913	637601.0385	50%
Bikes	95145813.35	84131887.76	12%
Clothing	2141507.025	1750636.293	18%
Components	11807808.02	10768475.71	9%



Insight: Accessories have the best profit margin with 50%. While the revenue for accessories is low but the profit margin is so high. This mean that we can focus on this category to have more profit.

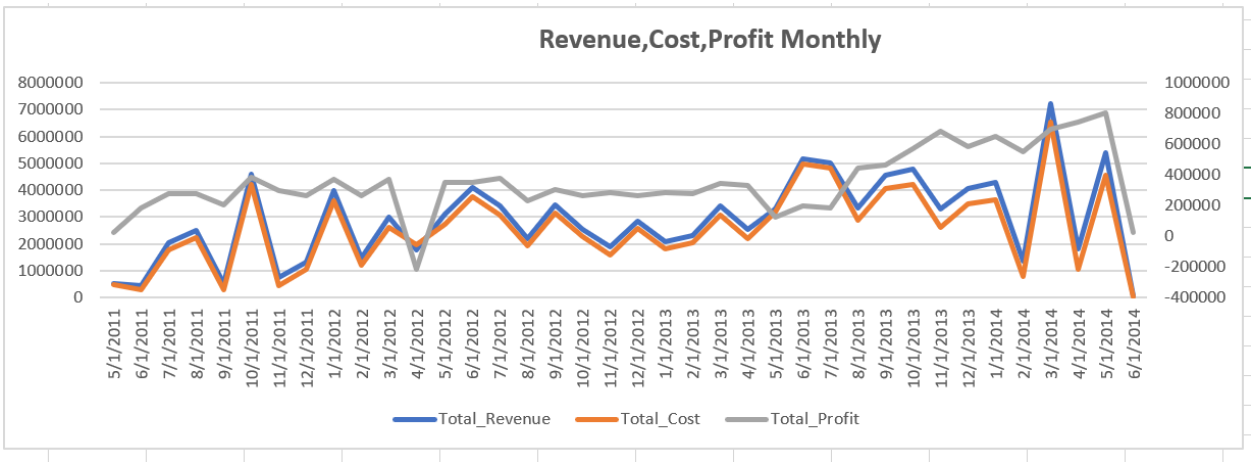
```
--7. show the profit,revenue,cost per month

SELECT CONVERT(Date,DATEADD(month, DATEDIFF(month, 0,OrderDate), 0)) AS OrderMonth,
       SUM(UnitPrice*OrderQty) AS Total_Revenue,
          SUM(Cost * OrderQty)  AS Total_Cost,
          ROUND((SUM(UnitPrice*OrderQty) - SUM(Cost * OrderQty)),2) AS Total_Profit

  FROM #SALEFINAL
  GROUP BY CONVERT(Date,DATEADD(month, DATEDIFF(month, 0,OrderDate), 0))
  --ORDER BY CONVERT(Date,DATEADD(month, DATEDIFF(month, 0,OrderDate), 0))
  ORDER BY ROUND((SUM(UnitPrice*OrderQty) - SUM(Cost * OrderQty)),2) DESC;
```

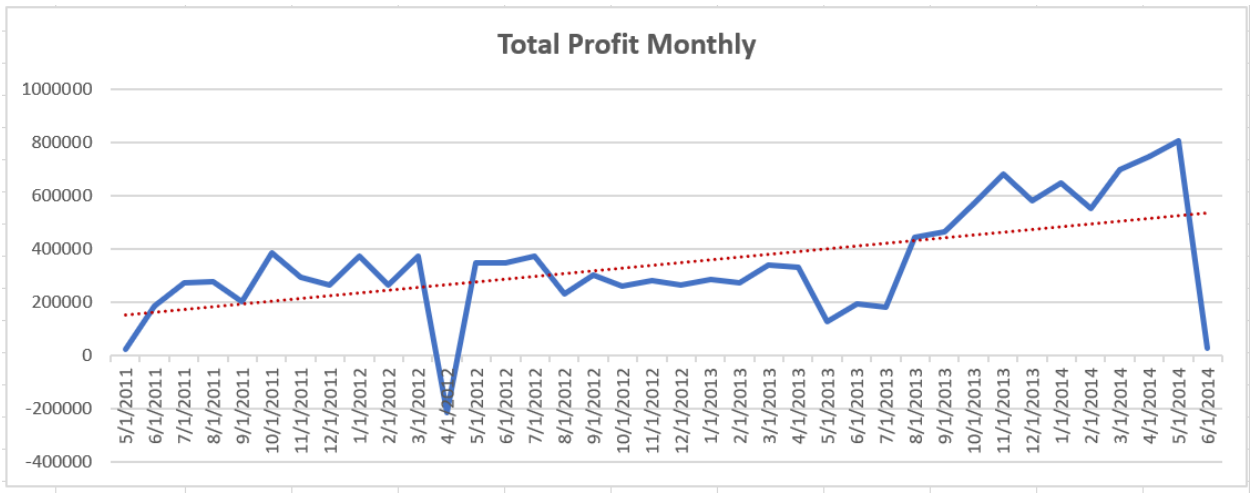
100 %

Results | Messages

	OrderMonth	Total_Revenue	Total_Cost	Total_Profit
1	2014-05-01	5379614.1726	4574201.4111	805412.76
2	2014-04-01	1797173.923	1050683.7491	746490.17
3	2014-03-01	7238946.1022	6541865.9403	697080.16
4	2013-11-01	3313783.4585	2629991.7129	683791.75
5	2014-01-01	4292364.4301	3642349.1304	650015.30
6	2013-12-01	4078157.0241	3494684.7969	583472.23
7	2013-10-01	4801862.0289	4233302.6729	568559.36
8	2014-02-01	1337725.0356	784695.0782	553029.96
9	2013-09-01	4540212.1965	4076136.3363	464075.86
10	2013-08-01	3345067.5667	2899123.9669	445943.60
11	2011-10-01	4590874.8687	4204792.7604	386082.11
12	2012-07-01	3427252.4011	3052474.7259	374777.68

Query executed successfully. DESKTC





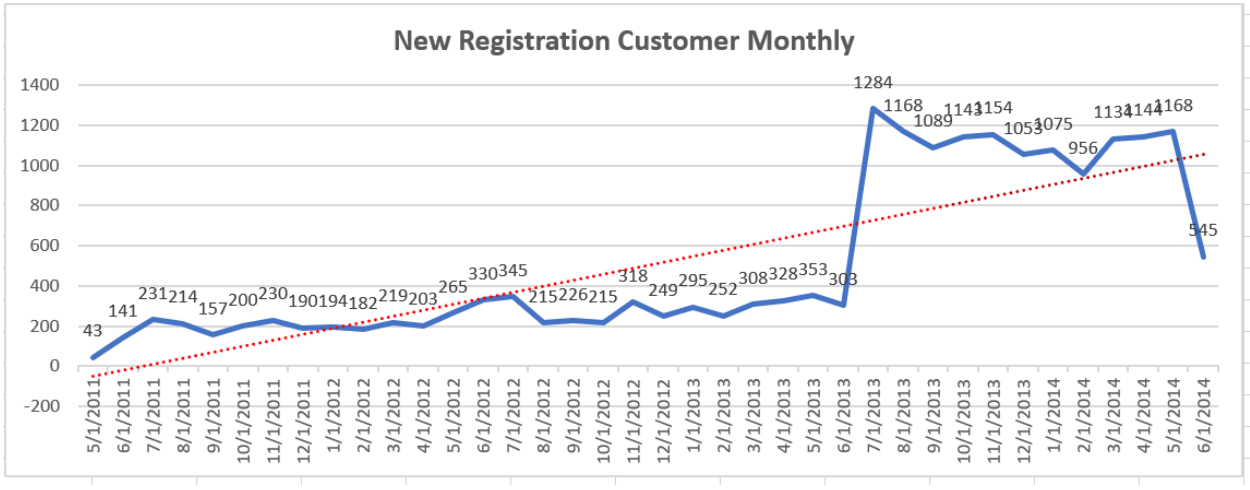
Insights : Profit increase throughout the time, which highest at May 2014 reach to 800000.

```sql
-- 8. Numer of registrations monthly

WITH reg_date AS
        (
         SELECT    CustomerID,
                   MIN(CONVERT(Date,OrderDate)) as reg_date
           FROM    #SALEFINAL
        GROUP BY   CustomerID
        )

SELECT     CONVERT(Date,DATEADD(month,DATEDIFF(month,0,reg_date),0)) AS OrderMOnth,
           COUNT(distinct CustomerID) AS regs
  FROM     reg_date
  GROUP BY CONVERT(Date,DATEADD(month,DATEDIFF(month,0,reg_date),0))
  ORDER BY CONVERT(Date,DATEADD(month,DATEDIFF(month,0,reg_date),0))
```

100 %

Results | Messages

	OrderMOnth	regs
1	2011-05-01	43
2	2011-06-01	141
3	2011-07-01	231
4	2011-08-01	214
5	2011-09-01	157
6	2011-10-01	200
7	2011-11-01	230
8	2011-12-01	190
9	2012-01-01	194
10	2012-02-01	182
11	2012-03-01	219
12	2012-04-01	203



Insight : Number of new registration customer keep stable from May 2011 to June 2013. But, there is a significant increasing after June 2014.