Assignment 1

1) Using AdventureWorks2017, please write SQL code to create the report displayed in the attached file.

All numbers are right aligned

No data, leave it blank

Quarterly sales

Quarterly sales as a percentage of the yearly grand total sales

Yearly grand total sales

OrderYear	1st Quarter	Annual %	4 to 1 Change	2nd Quarter	Annual %	1 to 2 Change	3rd Quarter	Annual %	2 to 3 Change	4th Quarter	Annual %	3 to 4 Change	AnnualSales
2011				1,074,117	7.59%		5,647,551	39.90%	4,573,434	7,434,031	52.52%	1,786,480	14,155,700
2012	9,443,737	25.07%	2,009,706	9,935,495	26.37%	491,758	10,164,407	26.98%	228,912	8,132,061	21.58%	-2,032,346	37,675,700
2013	8,771,886	17.91%	639,825	12,225,061	24.97%	3,453,175	14,339,319	29.28%	2,114,258	13,629,621	27.83%	-709,698	48,965,888
2014	14,373,277	64.11%	743,656	8,046,221	35.89%	-6,327,056							22,419,498

Change from last quarter of the prior year to the first quarter of the new year

Change from 3rd quarter to the 4th quarter

No data, leave it blank

2) /* Review of the Data Hierarchy, Data Aggregation and Horizontal Reporting */

/* Use AdventureWorks2017 database */

/* The following code creates a longlist report. */

```
SELECT DISTINCT h.SalesPersonID, p.FirstName, p.LastName, d.ProductID
FROM Sales.SalesOrderHeader h
join Sales.SalesOrderDetail d
on d.SalesOrderID=h.SalesOrderID
JOIN Person.Person p
ON h.SalesPersonID = p.BusinessEntityID
ORDER BY h.SalesPersonID, ProductID;
```

/* We want to create a shortlist report containing the same data without duplicating the salesperson info. The code below tried to do it but the generated report had an issue. It still duplicated some salesperson info. */

```
select distinct sh.SalesPersonID, pp.FirstName,pp.LastName,
stuff((select ', ', rtrim (cast(ProductID as char))
from Sales.SalesOrderDetail
```

```sql
where SalesOrderID= sh.SalesOrderID
order by sd.ProductID
for xml path('')), 1,2,'' ) as Product
from Sales.SalesOrderHeader sh
join
Sales.SalesOrderDetail sd
on sd.SalesOrderID=sh.SalesOrderID
join Person.Person pp
on pp.BusinessEntityID = sh.SalesPersonID
order by sh.SalesPersonID;
```

```sql
/* Please investigate the issue and find out what caused the issue.
Give a detailed explanation of your findings. Writing some code
to prove your explanation would be convincing. */
```

```sql
/* Modify the incorrect solution provided above to create the correct
report. */
```

```sql
/* Use STRING_AGG to create the same report */
```