Лабораторная работа: Использование инструкции SELECT

1. **Отображает все столбцы в таблице Person**

```
SELECT *
FROM Person.Person
```

2. **Отображает только выбранные столбцы в таблице Person**

```
SELECT Title, FirstName, LastName, MiddleName
FROM Person.Person
```

3. **Получение конкретных строк в таблице**

```
SELECT ProductNumber, Name, ListPrice, Color, Size, Weight
FROM Production.Product
WHERE ListPrice < $100
```

```
SELECT ProductNumber, Name, ListPrice, Color, Size, Weight
FROM Production.Product
WHERE ListPrice < $100
AND ProductNumber LIKE 'SO%'
```

4. **Фильтрация данных с помощью сравнения строк**

```
SELECT ProductNumber, Name, ListPrice, Color, Size, Weight
FROM Production.Product
WHERE ListPrice < $100
AND ProductNumber Like 'SO%'
OR ProductNumber Like 'TG%'
```

5. **Получение диапазона значений**

```
SELECT ProductNumber, Name, ListPrice, Color, Size, Weight
FROM Production.Product
WHERE ProductNumber LIKE 'SO%'
        OR (ListPrice Between $50 and $180
         AND ProductNumber LIKE 'TG%')
```

6. **Получение списка значений**

```
SELECT ProductNumber, Name, ListPrice, Color, Size, Weight
FROM Production.Product
WHERE ProductNumber LIKE 'SO%'
OR (ListPrice Between $50 and $180
 AND ProductNumber LIKE 'TG%'
 AND Size IN ('M', 'L'))
```

7. **Работа со значениями NULL**

```
SELECT ProductNumber, Name, Weight
FROM Production.Product
WHERE ProductLine = NULL
```

```
SELECT ProductNumber, Name, Weight
FROM Production.Product
WHERE ProductLine IS NULL
```

```
SELECT ProductNumber, Name, Weight,
ISNULL(ProductLine, 'NA')
FROM Production.Product
```

```
SELECT ProductNumber, Name, Weight,
ISNULL(ProductLine, 'NA') AS 'Product Line'
FROM Production.Product
```

```
SELECT ProductNumber, Name, COALESCE(CONVERT(NVARCHAR,Weight),
SIZE, 'NA')) AS Measurement,
ISNULL(ProductLine, 'NA') AS 'Product Line'
FROM Production.Product
```

8. Сортировка данных
```
SELECT ProductNumber, Name, Class
FROM Production.Product
ORDER BY Class

SELECT ProductNumber, Name, Class, ListPrice
FROM Production.Product
ORDER BY Class, ListPrice Desc
```

9. Устранение дублирования строк
```
SELECT DISTINCT Color
FROM Production.Product
WHERE ProductNumber LIKE 'HL%'
```

10. Использование выражений
```
SELECT LastName + ',' + FirstName
FROM Person.Person

SELECT (LastName + ',' + FirstName)
AS Contacts
FROM Person.Person

SELECT (LastName + ',' + FirstName) AS Contacts
FROM Person.Person
WHERE SUBSTRING (LastName,1,3)= 'Mac'
```

11. Агрегатные функции
```
SELECT AVG(VacationHours)
AS 'AverageVacationHours',
SUM(SickLeaveHours) AS 'TotalSickLeave Hours'
FROM HumanResources.Employee
WHERE JobTitle LIKE '%Vice President%'

SELECT COUNT(*)
FROM HumanResources.Employee
```

12. Использование Агрегатных функций с NULL

14. Использование предложения GROUP BY

```
SELECT Color, AVG(ListPrice) AS 'AvgListPrice'
FROM Production.Product
WHERE ProductNumber = 'FR-R72R-58'
GROUP BY ALL Color
```

15. Использование предложения HAVING

```
SELECT ProductID, AVG(OrderQty)
AS 'AverageQuantity', SUM(LineTotal) AS Total
FROM Sales.SalesOrderDetail
GROUP BY ProductID
HAVING SUM(LineTotal) > $1000000.00 AND AVG(OrderQty) < 3
```

16. Как работают операторы ROLLUP и CUBE

```
SELECT ProductID, Shelf, SUM(Quantity) AS 'QtySum'
FROM Production.ProductInventory
GROUP BY ROLLUP(ProductID, Shelf)
```

```
SELECT SalesOrderID, ProductID,
```