

The second part of the homework

I have used a database such as **Microsoft SQL Server** because probably SQL Server will be the selected database during work. There are a total of 3 tasks. I would like to show the content of the task, the SQL query as the solution to this task, and the result of the SQL query. All queries are based on **T-SQL** and performance metrics were considered while implementing solutions.

1. First task

1.1 Task

A list of policies, which have more than one claim assigned

1.2 Solution

```
SELECT
    p.policyid as "Policy ID",
    COUNT(c.claimid) as "Number of Claims"
FROM
    Policies p
JOIN
    Claims c ON p.policyid = c.policyid
GROUP BY
    p.policyid
HAVING
    COUNT(c.claimid) > 1;
```

Result:

```
(416 rows affected)
```

```
Completion time: 2023-07-27T12:42:12.4434915+03:00
```

1.3 All results

All results can be found under the QueryResults folder with the relevant task name

2 Second task

2.1 Task

Brands, average Premium and average Incurred Amount of top 5 most popular (most frequent) brands' policies with Glass type claims;

2.2 Solution

```
WITH TopBrands AS (  
  SELECT TOP 5 p.Mark AS Brand, COUNT(c.claimid) AS "Number of claims"  
  FROM  
    Policies p JOIN Claims c ON p.policyid = c.policyid  
  WHERE  
    c.ClaimType = 'Glass'  
  GROUP BY  
    p.Mark  
  ORDER BY  
    "Number of claims" desc  
)  
  
SELECT tb.Brand, AVG(p.premium) AS "Average of premiums", AVG(c.IncurredAmount) AS  
  "Average incurrend amount"  
FROM  
  TopBrands tb  
JOIN  
  Policies p ON tb.Brand = p.Mark  
JOIN  
  Claims c ON p.policyid = c.policyid  
WHERE  
  c.ClaimType = 'Glass'  
GROUP BY  
  tb.Brand;
```

2.3 Result

(5 rows affected)

Completion time: 2023-07-27T12:19:41.0567044+03:00

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	Brand	Average of premiums	Average incurrend amount
1	VOLKSWAGEN	351.35234375	347.190625
2	TOYOTA	433.859649122807	368.285964912281
3	SKODA	329.347826086957	289.419565217391
4	AUDI	606.619444444444	502.252777777778
5	MITSUBISHI	464.13125	446.00625

3 Third task

3.1 Task

Comparison of average Incurred Amount of first-time happen claims versus second claim for policies with more than one claim.

3.2 Solution:

```
WITH RankedClaims AS (  
    SELECT c.claimid, c.policyid, c.IncurredAmount, c.ClaimType,  
           ROW_NUMBER() OVER (PARTITION BY c.policyid ORDER BY c.claimid) AS ClaimNumber  
    FROM Claims c  
    WHERE c.policyid IN (  
        SELECT  
            policyid  
        FROM  
            Claims  
        GROUP BY  
            policyid  
        HAVING  
            COUNT(claimid) > 1  
    )  
)  
SELECT  
    rc.policyid as "Policy ID",  
    AVG(CASE WHEN rc.ClaimNumber = 1 THEN rc.IncurredAmount END) AS "Average incurred  
amount in first claim",  
    AVG(CASE WHEN rc.ClaimNumber = 2 THEN rc.IncurredAmount END) AS "Average incurred  
amount in second claim"  
FROM  
    RankedClaims rc  
WHERE  
    rc.ClaimNumber IN (1, 2)  
GROUP BY  
    rc.policyid;
```

3.3 Result

```
(416 rows affected)
```

```
Completion time: 2023-07-27T12:53:37.2683985+03:00
```

```
|
```

3.4 All results

All results can be found under the QueryResults folder with the relevant task name