

Assignment 3 DBT

Details :

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- SRN : PES2UG20CS237
- Section : D

Task A :

- Creating partitions and inserting a million rows :
- Code :

```
-- create database partdb
use partdb
EXEC sp_configure 'show advanced options', 1;
GO
RECONFIGURE WITH OVERRIDE;
GO
EXEC sp_configure 'max degree of parallelism', 4;
GO
RECONFIGURE WITH OVERRIDE;
GO
CREATE PARTITION FUNCTION CustRangePF11 (char)
AS RANGE LEFT FOR VALUES ('c','e') ; -- ab cd ef left
ranges
GO
ALTER DATABASE [partdb] ADD FILEGROUP [FG1]
GO
USE [partdb]
GO
ALTER DATABASE [partdb] ADD FILEGROUP [FG2]
GO
ALTER DATABASE [partdb] ADD FILE ( NAME = N'testFG1',
```

```

FILENAME = '/var/opt/mssql/data/test1.md' , SIZE =
8192KB , FILEGROWTH = 65536KB ) TO FILEGROUP [FG1]
GO
ALTER DATABASE [partdb] ADD FILE ( NAME = N'testFG2',
FILENAME = '/var/opt/mssql/data/test2.md' , SIZE =
8192KB , FILEGROWTH = 65536KB ) TO FILEGROUP [FG2]
GO
ALTER DATABASE [partdb] ADD FILEGROUP [FG3]
GO
ALTER DATABASE [partdb] ADD FILE ( NAME = N'testFG3',
FILENAME = '/var/opt/mssql/data/test3.md' , SIZE =
8192KB , FILEGROWTH = 65536KB ) TO FILEGROUP [FG3]
GO
CREATE PARTITION SCHEME CustRangePS1
AS PARTITION CustRangePF11
TO (FG1, FG2, FG3) ;
GO
CREATE TABLE students_no_index(SRN VARCHAR(15),
student_name varchar(20), DOB DATETIME, branch CHAR(3),
section char(1)) ON CustRangePS1 (section) ;
DECLARE @counter SMALLINT;
SET @counter = 0;
WHILE @counter < 1000000
BEGIN
DECLARE @localsection char;
SELECT @localsection = CONVERT(varchar(255), NEWID())
insert into students_no_index values
('PES2UG20CS237'+@localsection,'andomlygenerated'+@local
section,'11/10/2002','CSE',@localsection);
SET @counter = @counter + 1
END;
GO

```

```

29 ALTER DATABASE [partdb] ADD FILE ( NAME = N'testFG3', FILENAME = '/var/opt/mssql/data/test3.md' , SIZE = 8192KB , FILEGROWTH = 65536KB ) TO FILEGROUP [
30 GO
31
32 CREATE PARTITION SCHEME CustRangePS1
33 AS PARTITION CustRangePF11
34 TO (FG1, FG2, FG3) ;
35 GO
36
37
38 CREATE TABLE students_no_index(SRN VARCHAR(15), student_name varchar(20), DOB DATETIME, branch CHAR(3), section char(1)) ON CustRangePS1 (section) ;
39
40
41 DECLARE @counter BIGINT;
42 SET @counter = 0;
43 WHILE @counter < 1000000
44 BEGIN
45     DECLARE @localsection char;
46     SELECT @localsection = CHAR(cast((5) * rand() + 65 AS INTEGER));
47     insert into students_no_index values ('PES2UG20CS237'+@localsection,'andonlygenerated'+@localsection,'11/10/2002','CSE',@localsection);
48     SET @counter = @counter + 1
49 END;
50 GO
51

```

Messages

```

(1 row affected)
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(1 row affected)
(1 row affected)
Query was canceled by user
Total execution time: 00:08:37.434

```

Query 1 :

```
select count(*) from students_no_index as s JOIN teachers_no_index as t ON s.section=t.section AND s.section = 'C';
```

Results Messages Query Plan Plan Tree Top Operations

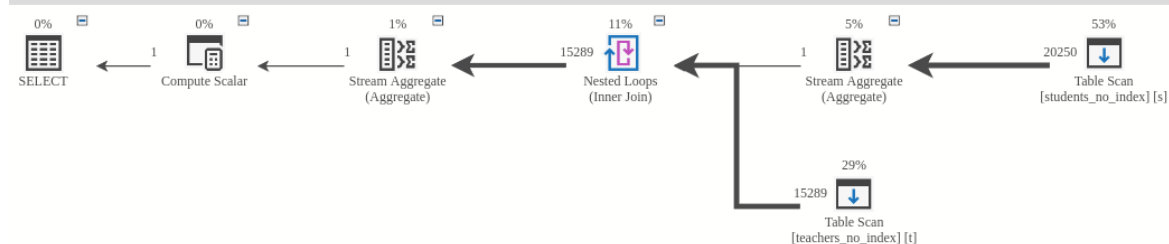
Query 1: Query cost (relative to the script): 100.00%

select count(*) from students_no_index as s JOIN teachers_no_index as t ON s.section=t.section AND s.section = 'C'

Missing Index (Impact 29.5313): CREATE NONCLUSTERED INDEX [<Name of Missing Index, sysname,>]ON [dbo].[teachers_no_index] ([section])

Missing Index (Impact 54.0276): CREATE NONCLUSTERED INDEX [<Name of Missing Index, sysname,>]ON [dbo].[students_no_index] ([section])

Missing Index (Impact 37.8022): CREATE NONCLUSTERED INDEX [<Name of Missing Index, sysname,>]ON [dbo].[teachers_no_index] ([section])



- Cost : 0.2026447

Query 2 :

```
58
59 select count(*) from students_no_index as s JOIN teachers_no_index as t ON s.branch=t.branch AND s.section='C';
```

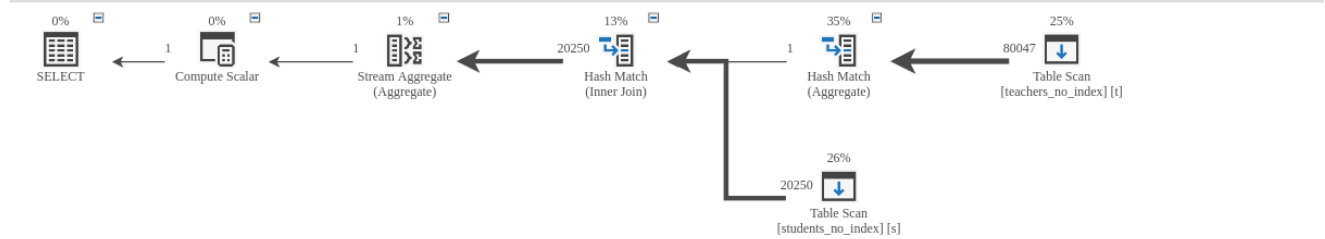
Results Messages **Query Plan** Plan Tree Top Operations

Query 1: Query cost (relative to the script): 100.00%

Select count(*) from students_no_index as s JOIN teachers_no_index as t ON s.branch=t.branch AND s.section='C'

Missing Index (Impact 26.2434): CREATE NONCLUSTERED INDEX [<Name of Missing Index, sysname,>] ON [dbo].[students_no_index] ([section]) INCLUDE ([branch])

Missing Index (Impact 37.1902): CREATE NONCLUSTERED INDEX [<Name of Missing Index, sysname,>] ON [dbo].[students_no_index] ([branch],[section])



- Cost : 0.8922026

Note : The second query was not based on partition and hence a very high time for execution can be observed.