**Aula Prática 8**

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**8.1**

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **#** | **Query** | **Rows** | **Cost** | **Pag. Reads** | **Time (ms)** | **Index used** | **Index Op.** | **Index Creation SQL** |
| 1 | select \* from Production.WorkOrder | 72591 | .488021 | 722 | 815 | WorkOrderID (PK) | Clustered Index Scan |  |
| 2 | select \* from Production.WorkOrder where WorkOrderID=1234 | 1 | .0032833 | 14 | 54 | WorkOrderID (PK) | Clustered Index Seek |  |
| 3.1 | SELECT \* FROM Production.WorkOrder  WHERE WorkOrderID between 10000 and 10010 | 11 | .0032976 | 196 | 78 | WorkOrderID (PK) | Clustered Index Seek |  |
| 3.2 | SELECT \* FROM Production.WorkOrder  WHERE WorkOrderID between 1 and 72591 | 72591 | .488021 | 724 | 737 | WorkOrderID (PK) | Clustered Index Seek |  |
| 4 | SELECT \* FROM Production.WorkOrder  WHERE StartDate = '2007-06-25' | 55 | .522864 | 724 | 189 | WorkOrderID (PK) | Clustered Index Scan |  |
| 5 | SELECT \* FROM Production.WorkOrder WHERE ProductID = 757 | 9 | .037359 | 846 | 316 | ProductID | Nonclustered Index Seek, Clustered Key Lookup | CREATE INDEX idx ON Production.WorkOrder(ProductID) |
| 6.1 | SELECT WorkOrderID, StartDate FROM Production.WorkOrder WHERE ProductID = 757 | 9 | .0032945 | 1411 | 312 | ProductID Covered (StartDate) | Nonclustered Index Seek | CREATE INDEX idx ON Production.WorkOrder (ProductID) INCLUDE (StartDate) |
| 6.2 | SELECT WorkOrderID, StartDate FROM Production.WorkOrder WHERE ProductID = 945 | 1105 | .0059894 | 1461 | 302 | ProductID Covered (StartDate) | Nonclustered Index Seek | CREATE INDEX idx ON Production.WorkOrder (ProductID) INCLUDE (StartDate) |
| 6.3 | SELECT WorkOrderID FROM Production.WorkOrder WHERE ProductID = 945 AND StartDate = '2006-01-04' | 1 | .0059894 | 1419 | 330 | ProductID Covered (StartDate) | Nonclustered Index Seek | CREATE INDEX idx ON Production.WorkOrder (ProductID) INCLUDE (StartDate) |
| 7 | SELECT WorkOrderID, StartDate FROM Production.WorkOrder WHERE ProductID = 945 AND StartDate = '2006-01-04' | 1 | .0167833 | 1408 | 308 | ProductID and StartDate | Nonclustered Index Seek | CREATE INDEX idx ON Production.WorkOrder(StartDate) |
| 8 | SELECT WorkOrderID, StartDate FROM Production.WorkOrder WHERE ProductID = 945 AND StartDate = '2006-01-04' | 1 | .0032831 | 1649 | 393 | Composite (ProductID, StartDate) | Nonclustered Index Seek | CREATE INDEX idx ON Production.WorkOrder(ProductID, StartDate) |

**8.2**

|  |  |  |  |
| --- | --- | --- | --- |
| Combinações | Fragmentação dos índices (%) | Ocupação das páginas (%) | Tempo de inserção (ms) |
| fillfactor = 65 | 99,16 | 68,89 | 39043 |
| fillfactor = 80 | 98,72 | 68,37 | 39506 |
| fillfactor = 90 | 98,85 | 67,51 | 39843 |
| identity e fillfactor =65 | 98,93 | 68,21 | 40170 |
| identity e fillfactor =80 | 90,05 | 68,53 | 40603 |
| identity e fillfactor =90 | 90,05 | 68,45 | 40776 |
| Alínea e) com índice |  |  | 50690 |
| Alínea e) sem índice |  |  | 37333 |

**e)** Podemos que concluir que a inserção dos índices é mais lenta

**8.3**

**a)**

**i)** Create unique clustered index PK\_Ssn on EMPLOYEE(Ssn)

**ii)** Create nonclustered index IX\_CompleteName on EMPLOYEE(Fname,Lname

**iii)** Create unique clustered index PK\_Dnumber on DEPARTMENT(Dnumber

Create nonclustered index IX\_DepNumber on EMPLOYEE(Dno)

**iv)** Create unique clustered index PK\_Ssn on EMPLOYEE(Ssn)

Create unique clustered index PK\_EssnPno on WORKS\_ON(Essn, Pno)

Create nonclustered index PK\_Pnumber on PROJECT(Pnumber)