

Session 9

① Triggers events based on its MAKE ACTION

15 event listeners object level & event all

15 special type of stored procedure

direct view Fair does not give event

→ Can't be called

→ Can't take parameters

So special type of SP

* TYPES of Triggers

based on event

① DML Triggers [Tables, views]

(Insert, Update, Delete)

② DDL Triggers [DB, Schema]

(Create, Alter, Drop)

③ Logon Trigger SPECIAL + Trigger

To control → check if # of logon
displays & exit from session

④ DML Trigger DML

→ (insert, update, delete) events on
Table or View

→ (Select, Truncate) but Not called event

because Not stored in log file

possible events in Truncate, Select (Update)

total triggers in session

Date: _____

Ex1 Make Trigger happen Action (Show Msg)
When happen event on Table
Student → insert new std
OR Alter
Create Trigger ~~say welcome~~
On Student
with encryption

① After → insert to Table
or For Insert Trigger
ISL
AS
Select: Welcome to Route
of
③ Instead of insert
Action

Insert into Student (std_id, std_name)
values (22, 'samy')
→ When execute find happening
Trigger listen on it & execute
Trigger (Fir) direct

Select → Display as Column

Print → Events

→ Trigger is event listener

Alter / Drop دو بیان اکثری

* Trigger is Follow View of Specie \rightarrow Table 1

لَا زَمْ لِكُونِي مُوْكَوْدَعَ الْأَجْبَاهَ فِي لَفْسِ

legt Silvia Wisschemer, 10.000

- ↳ You can send Email when happen specific event by using

With Encryption, Execute A SQL Injection
Data || ~~is injected~~ User ↗
↳ | 20/21

* SUser Name)

buildIN Fun on Meta data to
Get Name login on SQL Server

DML → one object have
one trigger only on
one event only

For Send Email With Trigger:

Create Trigger nameofTrigger

on Table of View Requirements

After Insert, update, delete

AS built-in SF

EXEC msdb.dbo.sp_send_dbmail

@Profile_name = 'junit'

@recipients -

@body_

@ Subject = ' ';

Go میں enable کوں کوں send_email اک سچے اپنی email disable ہے کوں غالباً

Date : _____

* You want to make trigger when happen
update display user that make this
update & Date which happen update

* Create Trigger notifyOnStudent
on Student
With Encryption
After Update
AS

Select GetDate() as 'UpdateOn',
SUSER_NAME() as 'UpdatedBy'

{ * update Student
Set St-Address = 'Masouri'
Where St-Id = 22

Trigger fired due to update is in Up

* Example For → Raise Error()

give you local error message

local variable it uses

Raise Error({ MSG-ID | MSG-STR | @localVar }
(With added) , severity, state)
error(), b7 (Severity) C# Parameter
From 1 → 10 Parameter
Warning Parameter
11 → 20 Integer Value
Error From
0 → 255

Error

Date :

* You have two examples & you want
know difference between two examples

①

Create Trigger Disable Delete on student
on student
with Encryption
instead of Delete
As

Select 'You Can't Delete From Table'
just for insert Delete rule give

②

Create Trigger Disable Delete on student
on student
with Encryption
For Delete

As

Rollback Transaction

Select 'You Can't Delete From Table'

Rollback transaction delete rule will be given
رسالة في حال حذف المدخلات

Ex | Create or Alter Trigger Disable Delete
on student
with Encryption
instead of Delete

As

MSG STR

RaisError('you can''t DeleteFromTable',
16, 1)

Select this state

display

as MSG
error

Data :

① Drop Trigger Name of Trigger
Table || view || Schema (مثلاً لو نريد إزالة trigger من table أو view)
Schema . Name of Trigger

or

② Make Trigger Disable أيضاً
enable / disable
To Stoped Trigger

*

Alter Table ~~trigger~~ فيه ~~التي~~ فيه
Disable Trigger فيه

also disable , enable it is also
in wizard

* note:-

① You Can't Make More Than one
DML Trigger on object

one event | on one object For
only one DML Trigger

also you can't have two triggers on one object
also disable / enable trigger also
also you can't have two triggers on one object
Alter Table . Schema . name of Table

Date : _____

No: _____

* DDL Triggers

(Create , Alter, Drop) DDL events on
(DB or SQL server) structure

→ Database on server | DB objects
events

Table

View Function

Ex]

Create OR Alter Trigger NameOfTrigger

on All server → Server (جهاز)

3 → After | For CREATE DataBase

As even TYPE

Select 'DB is creation successfully'

→

→ If you created DB to Fail Trigger

→ Create Database Test

Ex) server DB & Alter des of it will

Create Trigger Disable Alter

on All server

with encryption

For ALTER-Database

As it may fail

→ Rollback Transaction

Select 'you can't Alter DB'

Date :

No:

*Important notes on DML Trigger:-

→ When Trigger fires based on event type
we found in runtime creation
Two Table in Body of trigger
① Inserted ② Deleted =

① If you listen on event inserted
Table inserted will contain Data
of inserted even

② If you listen on event Deleted
Table Deleted will contain Data
of Deleted even

③ While if you listen on event
updated

Table inserted → It will contain
new Values (Data) update like
↓ ↓ Deleted ↓ ↓ ↓
↓ ↓ old Values (Data) Update field

Ex Create Trigger Display Update Data
on Course

With Encryption

After update

AS

(Update all rows detail (لكل سجل))

Select * from Inserted
Select * from Deleted

Go

Date :

[EX] For لفظ على الـ Delete الكورس ده دا اسمه هو او الـ name_of_course
Delete Table deleted

Create Trigger Prevent Delete on Course

on Course

With Encryption

instead of Delete

AS

Select 'you can't Delete This Course
+ (Select crs_name From delete)

or

Select concat_ws(' ', 'You Can't Delete',
(Select crsname From
deleted))

event

Delete From Course

where crs_id = 800

Delete New Trigger لمنع الـ Delete في يوم السبت

Create Trigger Disable Delete From Student
on Student

With Encryption

instead of Delete

AS

If Format(GetDate(), 'ddd') != Saturday

Delete From Student

where st_id in (Select st_id
From Deleted)

else

Select 'You Can't delete this st
in Saturday'

Date :
No. :

* DDL Trigger

on DB based on objects

عالي المسنوي \equiv DB \neq objs ياتفعها

View, Table, Function

DB Scope (Objects of DB)

(Table, View, Function, ...) events

Create Trigger NOTIFY on CreateTableIT
on Database
With Encryption
After Create Table
AS

Select 'Table is created'

→ For Filar trigger

Create Table Test

(Id int PrimaryKey)

* If you want make group of events on object.

AFTER DDL TABLE EVENTS

Function

Vielle

1

Del Stevens 2011-11-15 18:58 File (step 10)
Select EventData()

Server Scope

→ You Can Make Multiple Triggers
on Same event of Same
DB (Create, Alter, Drop)
& DB Scope

Ex] For Disable Creation on Server
IF You're DB || Create If user has
Create Roll (or Authorization) On

Create or Alter Trigger Notify on DB created
on ALL Server
With Encryption

After Create_Database

AS

IF ISMember('db_owner')=0

(s) Roll Trigger create If user Id
Begin

Print 'You Must ask your DBA to
Create this DB!'

RollBack Transaction

Ex] on Scope DB → Alter DB

Create Trigger DisableAlterTable

on Database

With Encryption

For ALTER Table

AS IF ISMember('db-owner')=0

Select 'You Can't Alter This Table'

Rollback Transaction

Alter If user is owner of table *

User

Date :

No.:

* Logon Trigger

SQL Server to login Job

* You can make multiple trigger on same event

Text

Create Trigger Connect_limit_trigger
on All server with Execute As 'Mai'
For ~~Logon~~ Logon
AS

Begin

IF original_login() = 'Mai' And
(Select count(*)

From SJS.dim_exec_sessions
Where IS_USER_PROCESS = 1 And
original_login_name = 'Mai') >

Rollback;

End

for Mai last 31 user will life also if
logon is less than 3 باكترون من 3 login
limit # of login

* Index

- each Table store data as Pages
- each Page → 8K bytes → 8000 byte
- each page contains records in the table
- it can have multiple pages
- DIF Table have Primary Key Data
Sorted based on PR (a case sensitive)
by default indexed on PR

~~لكل جدول يحتوي على PR حيث كل جدول يحتوي على PR~~
AS Heap

worst scenario

You make scan on all pages of Table. (check row by row)

- PR have Two benefits

① Make Data unique (unrepeated)

② Creation default index based on PR
- Scan on Page only

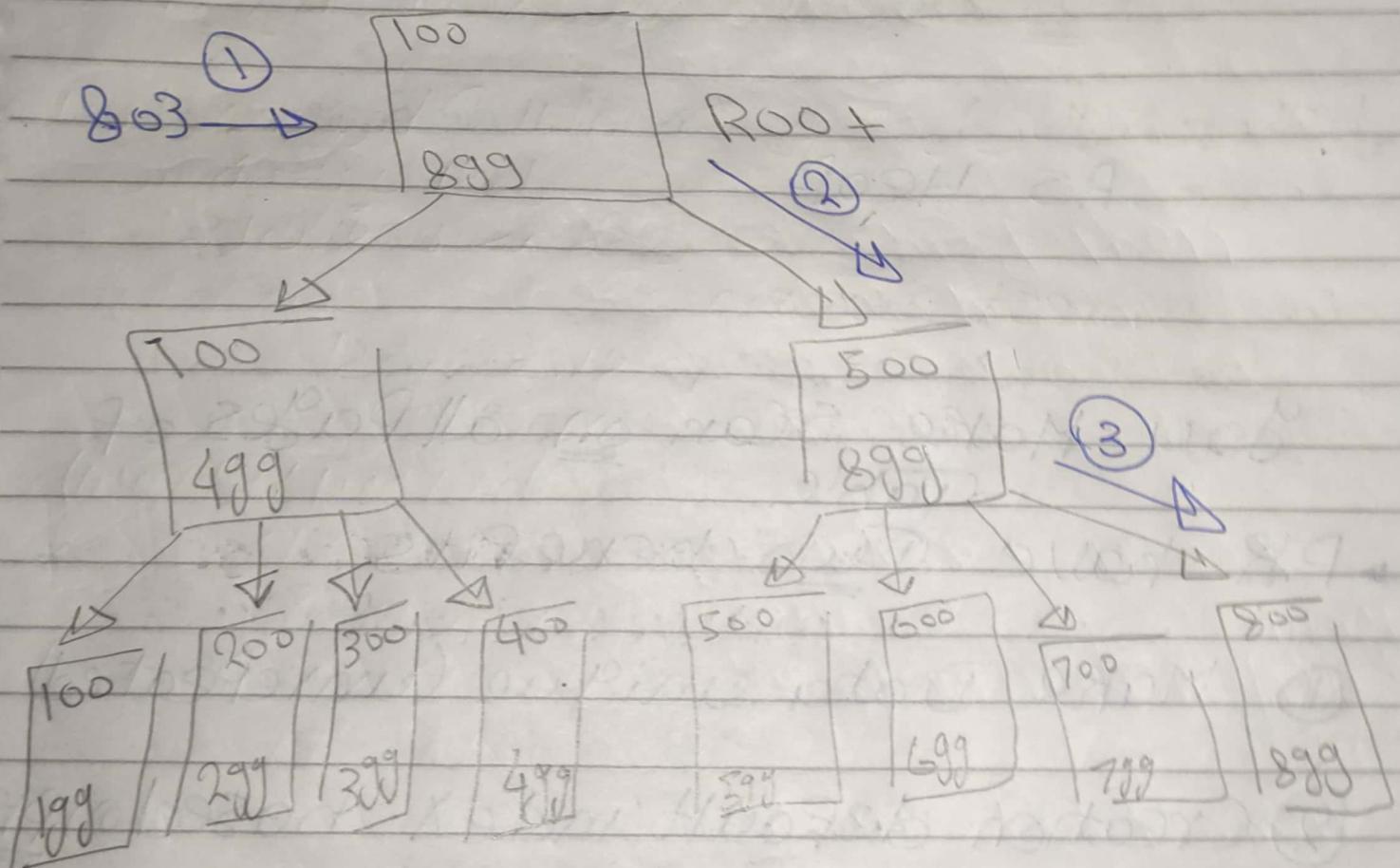
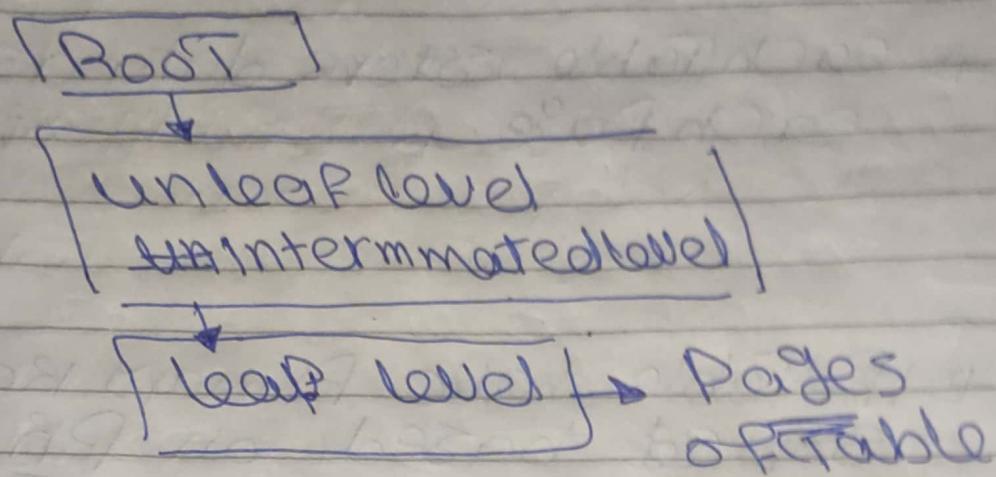
* Table can contain multiple indexed

Indexed to ID or any key word in the table

Date : _____

No. :

* indexed AS B+ Tree



Select *

From Employee

Where St_Id = 803

Date: _____
You have Two types of Index

- ① Clustered index
- ② non Cluster index

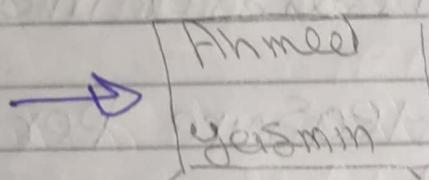
→ Table have only one Cluster index
but can have Multi non Cluster index

* Cluster index
leaf level contain actual Data

* non Cluster index (Pointer)
leaf level contain (reference) on
Cluster Index (actual Data)

Ex: Create Nonclustered Index IX-Name
on Employees (Name)

→ For the best search based on
Cluster index (actual Data)



Select *
From Employee
Where Name='Mona'

but that is
pointer refer
to record of
cluster index

Date : _____

No. :

→ You Must Make indexed ~~be based~~ on columns which you more search to improve search but it's slow / worse to inserted

↓ results of insert into table is insert into indexed

inserting select from table
insert into table is insert into indexed

كثير وقت في الـ insert

note:-

→ If you make orderBy then you make search this order by joins where result

→ Column of cluster index must unique but non cluster index ~~not~~ ^{May} ~~must~~

→ you can measure performance of query

① You can ~~make~~ calculate Time before , after ^{الجوف}

② By using tool

explore server profile

sys.dm_exec_query_stats

sys.dm_exec_requests

sys.dm_exec_sql_text

~~Non~~ Non

Create Clustered Index IXname
on Student (Fname)
(Fname Desc)

Select *

From Student

Where Fname = 'Nohei'

* Difference between PR, FR
unique Key

Create Table Test

X int Primary Key,
Y int unique

- Table have Two indexes

* Primary Key

* unique Key

① unique

① allow null only

notallownull

once unique

cluster index

noncluster index

Faster

slower

only one

pointer refer Actual

Actual Data

More one indexes

* You have Type / called unique index

Create unique Index IX_Age

on Student (St-Age)

Will Make 2 things if there is No
repeated Values in St-Age column

① Make unique Key on St-Age

② // nonCluster index on St-Age

Date :

* How Can I Select Columns to Make
Index on It?

- ① Analysis based (Customer required)
- ② Testing (using SQL Server Profiler & Tuning Advisor)

الآن نعم الـ SQL Server Tools
indexes g. like اول index all

- * SQL Server Profiler
Contain Query & Detail
- * Tuning Advisor
Make Analysis for file
& return report

* This Improve Performance queries
Search

* **Indexed View**
Index on View
Create View StudentDeptView
With Encryption
AS

Select S.St-Id, D.DeptName
From Students, Department D
Where S.StDeptId = D.Dept-Id

الآن نعم الـ SQL Server Tools
indexes g. like اول index all

Id = Student.Id like (Student)

و Id من المفترض هو

Date : _____

* For solve previous problem

It's easiest to copies view (إذاً أصل وتحت)
والآن نريد أن

by using Schema Binding

is (Optimize) Performance (أداء) وكمان يزوي
Create or Alter View StudentDept View
With SchemaBinding, Encryption
AS

Select st_id, Deptname
From dbo.Student, dbo.Department
Where S.DeptId = D.DeptId
and st_id = 1

Worse Check if it is good enough
IF Meta Data of View
ذلك هو الذي يتحقق لأن كده كل ما يجيء بـ st_id
فهي مسخنة بـ Dependence

SQL FOR INDEX View

Create Index IX_03 ~~Schema binding~~
on StudentDept View (st_id)

ذلك إيجاد unique index لـ view (أيضاً
الآن إيجاد unique index لـ view)

Select *
From StudentsDepartment View
Where st_id = 1

More Improve Performance

034

Date :

No:

* Delete Truncate

Delete From Student

// Delete all Data of Table

specific data & gives list

Truncate Table Student

// Delete all Data of student

Conditions لـ Truncate of

Data of specific given list

Data

* If you want delete All Data
of Table using Truncate

because

= Delete store in log file

long time take time

Drop Table ~~is DDL~~ Without Data

8.

not store in log file

- Fast More Delete

* Using Delete when you want
remove specific Data

Date: _____

* Transaction control language (TCL)

In Transaction

- ① If insert, update, delete called implicit Transaction
- ② If you have more than insert, update, delete (combination) called Explicit Transaction

رسالة إلكترونية منيQuery is posted to you

* Transaction have Two Types:-

① IMPLICIT Transaction (DML Query)

Ex: insert into student (st_id, st_name)
Values (100, 'Ahmed')

Ex: update student
Set st_Age=30
Where st_Age=20

② EXPLICIT Transaction

Set of IMPLICIT Transactions

Begin Transaction

Set of IMPLICIT Transactions

Commit Transaction | Rollback Transaction

It is set if OR

OR

at least one problem

at one of set

Obviously it's

Create Table Parent

(ParentId int Primary Key)

Insert into Parent Values (1), (2), (3)
Insert 3 rows

Create Table Child

(ChildId int Primary Key,
PId int references Parent(ParentId))

Insert into Child
Values (1,1), (2,100), (3,3)

↓
أولاً insert child = insert child لـ 3 rows
ثانياً insert child values (1,1), (2,100), (3,3)

Begin Transaction

Insert into Child Values (1,1)

" " " " (2,100) error

" " " " (3,3) error

Set of implicit Transaction

Commit Transaction

Rollback Transaction

Rollback Transaction

Rollback Transaction

Date:

Commit Jel \rightarrow Insert child values \rightarrow Try/Catch Jel
Rollback Jel \rightarrow Go to

Begin Try

Begin Transaction

Insert into Child Values(7,1)

\rightarrow Insert into Child Values(8,100)

Insert into Child Values(9,3)

Commit Tran

End Try

Begin Catch

Roll back Tran

End Catch

~~Roll back Tran if errors Jel could occur in child~~

Rollback Jel \rightarrow Catch Jel

if row

out Jel \rightarrow Rollback Jel \rightarrow End Jel

Begin Try

Begin Transaction

Insert into Child Values(11,1)

Save Tran Po1

Insert into Child Values(12,2)

Insert into \rightarrow (13,100)

~~Ex~~ Commit Tran

End Try

Begin Catch

Rollback Tran Po1

End Catch

\rightarrow save all child

Date:

No:

لـ دعـيـنـيـ اـنـ لـوـعـنـيـ حـرـجـ وـتـمـ بـسـكـلـ لـاـبـ

وـ لـسـتـعـلـاـوـتـ تـمـ دـمـلـهـ كـلـهـ



زـيـهـلـاـ اـنـ اـخـرـهـ وـاـنـتـ بـسـجـلـ فـالـأـولـ

الـسـجـلـ مـلـوـتـ دـمـلـهـ بـيـافـ الـعـلـمـعـلـاـ

* DCL (Data Control Language)

مـنـ خـلـالـهـ أـقـولـ مـيـنـ يـقـرـ

inser Data, update, Delete Data

LTP b7

* Permission Session

① login server (user)

② user DB ITI (user)

③ Schema HR (SePecific Tables)

Create Schema →

④ Permissions

عيـاهـ Grant [Select, Insert]

= طـبعـ Deny [Delete, Update]

Create Schema HR

alter Schema HR

Transfer [dbo].[Instructor]

alter Schema HR

Transfer Department

لـ دـعـيـنـيـ اـنـ دـعـيـنـيـ حـرـجـ وـتـمـ بـسـكـلـ لـاـبـ

as default → Deny

Date : _____

No:

دعاة الـ 21 بـ ٦٠٢، رخصة رسمية لـ ٦٠٢

Rebake act

Rebake insert
On instructor
To omar