**SQL Assignment 4**

1. Explain different types of views. Demonstrate with suitable examples.

In SQL, we can have two types of views, namely system-defined views and user-defined views. Within user-defined views, the two types of views that are widely known:

Simple View: Simple views are views that are created on a single table. We can perform only basic SQL operations in simple views. That means, we cannot perform analytical and aggregate operations by grouping, sets, etc. in simple views. We can definitely perform insert, update, delete directly from a simple view, but for that, we must have the primary key column in the view.

Complex View: Complex views as the name suggest are a bit complicated compared to simple views. Complex views are created on more than one database table. We can perform analytical and aggregate operations in complex views, but unlike simple views, we cannot perform insert, delete, and update directly from a complex view.

1. What is the difference between function and stored procedure? Write syntax for creating functions and stored procedures.

The function must return a value but in Stored Procedure it is optional. Even a procedure can return zero or n values. Functions can have only input parameters for it whereas Procedures can have input or output parameters. Functions can be called from Procedure whereas Procedures cannot be called from a Function.

Example of store procedure:

CREATE PROCEDURE uspProductList

AS

BEGIN

SELECT product\_name, list\_price

FROM production.products

ORDER BY product\_name;

END;

Example of Functions:

create function addfunction (@num1 int, @num2 int)

returns INT

as

BEGIN

declare @result int;

set @result=@num1+@num2;

RETURN @result

end

1. What is an index in SQL? What are the different types of indexes in SQL?

A SQL index is used to retrieve data from a database very fast. Indexing a table or view is, without a doubt, one of the best ways to improve the performance of queries and applications. A SQL index is a quick lookup table for finding records users need to search frequently

There are many types of indexes:

Such as:-

* Clustered Index.
* Non-Clustered Index.
* Column Store Index.
* Filtered Index.
* Hash Index.
* Unique Index.

1. Showcase an example of exception handling in SQL stored procedure.

Create procedure exception\_handeling

Declare @val1 int;

Declare @val2 int;

BEGIN TRY

Set @val1=8;

Set @val2=@val1%2;

if @val1=1

Print ' Error Not Occur'

else

Begin

Print 'Error Occur';

Throw 60000,'Number Is Even',5

End

END TRY

BEGIN CATCH

Print 'Error Occur that is:'

Print Error\_Message()

END CATCH

End;

1. Create a SQL function to split strings into rows on a given character?

Input String: Stephen;peter;berry;Olivier;caroline;

|  |
| --- |
| Stephen |
| Peter |
| Berry |
| Oliver |
| Caroline |

create function stng\_fun (@stng varchar(100))

returns VARCHAR

AS

BEGIN

DECLARE @result VARCHAR;

select @result=STRING\_AGG(column\_name,' ; ') from table;

return @result

end

1. What is a temporary and a variable table? Write suitable syntax to create temporary tables and variable tables.

Temporary Tables are physically created in the tempdb database. These tables act as the normal table and also can have constraints, index like normal tables. Table Variable acts like a variable and exists for a particular batch of query execution. It gets dropped once it comes out of batch.

To create a temporary table

CREATE TABLE #EmpDetails (id INT, name VARCHAR(25))

INSERT INTO #EmpDetails VALUES (01, 'Rohit'), (02, 'Rakesh')

To Create a Variable Table

DECLARE @ListOWeekDays TABLE(DyNumber INT,DayAbb VARCHAR(40) , WeekName VARCHAR(40))

INSERT INTO @ListOWeekDays

VALUES

(1,'Mon','Monday')  ,

(2,'Tue','Tuesday') ,

(3,'Wed','Wednesday') ,

(4,'Thu','Thursday'),

(5,'Fri','Friday'),

(6,'Sat','Saturday'),

(7,'Sun','Sunday')