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Micro Project Proposal

**Advance SQL (View, Index, Synonym,
Snapshot, Sequence)**

1. Aims/Benefits of the Micro-Project:

High speed. Using the SQL queries, the user can quickly and efficiently retrieve a large number of records from a database

In the standard SQL, it is very easy to manage the database system. It doesn't require a substantial amount of code to manage the database system SQL can be used in laptop, PCs, server.

Using the SQL language, the users can make different views of the database structure.

2. Course Outcome Addressed:

- a) Apply security and confidentiality on given database.
- b) Create and Manage Database using SQL Commands.

3. Proposed Methodology:

It is used by the server to speed up the retrieval of rows by using a pointer. It can reduce disk I/O(input/output) by using a rapid path access method to locate data quickly. An index helps to speed up select queries and where clauses, but it slows down data input, with the update and the insert statements. Indexes can be created or dropped with no effect on the data. We can create a view by selecting fields from one or more tables present in the database. A View can either have all the rows of a table or specific rows based on certain condition.

4. Action Plan:

Sr. No.	Details of Activity	Planned Start date	Planned Finish date	Name of Responsible Team Members
1	Search the information of different database	14-012-2020 3:00 – 5:00 PM	17-12-2020 3:00 – 5:00 PM	Bavge Prathmesh Santosh & Dhange Rohit Shivasharan
2	Collect the information of different database	19-12-202 3:00 – 5:00 PM	21-12-2020 3:00 – 5:00 PM	
3	Analysis of different information	24-12-2020 3:00 – 5:00 PM	28-12-2020 3:00 – 5:00 PM	
4	Analysis of information	31-12-2020 3:00 – 5:00 PM	02-01-2021 3:00 – 5:00 PM	
5	Compression of Database	04-01-2021 3:00 – 5:00 PM	07-01-2021 3:00 – 5:00 PM	
6	Features of Database	09-01-2021 3:00 – 5:00 PM	11-01-2021 3:00 – 5:00 PM	
7	Advantages and drawback of database	15-01-2021 3:00 – 5:00 PM	18-01-2021 3:00 – 5:00 PM	
8	Final report of project	21-01-2021 3:00 – 5:00 PM	23-01-2021 3:00 – 5:00 PM	

5. Resources Required:

Sr. No.	Name of resource / material	Specification	Quantity	Remarks
1	Computer	WINDOWS 11,8GB RAM, 512GB SSD	1	
2	Operating System	WINDOWS 11	1	
3	Software	Oracle Database 10G	1	
4	Browser	Google Chrome	1	

Names of Team Members with Roll No.'s:

Sr. No.	Enrollment No.	Name of Team Member	Roll No.
1	2110950062	Mr. Bavge Prathmesh Santosh	14
2	2110950068	Mr. Dhange Rohit Shivasharan	20

Mr. Lokare A. P**Name and Signature of the Teacher**

Micro-Project Report

Advance SQL (View, Index, Synonym, Snapshot, Sequence)

1. Rationale:

An index contains keys built from one or more columns in the table or view. For ondisk indexes, these keys are stored in a tree structure (B-tree) that enables SQL Server to find the row or rows associated with the key values quickly and efficiently. A sequence is a user defined schema bound object that generates a sequence of numeric values.

2. Aims/Benefits of the Micro-Project:

High speed. Using the SQL queries, the user can quickly and efficiently retrieve a large number of records from a database

In the standard SQL, it is very easy to manage the database system. It doesn't require a substantial amount of code to manage the database system SQL can be used in laptop, PCs, server.

Using the SQL language, the users can make different views of the database structure

3. Course Outcomes Achieved:

- a) Apply security and confidentiality on given database.
- b) Create and Manage Database using SQL Commands.

4. Literature Review:

A database object is any defined object in a database that is used to store or reference data. Anything which we make from create command is known as Database Object. It can be used to hold and manipulate the data. Some of the examples of database objects are: view, sequence, indexes, etc.

- Table – Basic unit of storage; composed rows and columns.
- View – Logically represents subsets of data from one or more tables.
- Sequence – Generates primary key values.
- Index – Improves the performance of some queries.
- Synonym – Alternative name for an object.
- Snapshot- It is a copies of a table or collection of tables.

5 Actual Methodology Followed:

5.1 Syntax:

Table:- CREATE TABLE [schema.]table (column datatype [DEFAULT expr][, ...]);

1.View:- CREATE VIEW "VIEW_NAME" AS "SQL Statement";

2.Sequence:-

CREATE SEQUENCE sequence_name

START WITH initial_value

INCREMENT BY increment_value

MINVALUE minimum value

MAXVALUE maximum value

CYCLE|NOCYCLE;

3.Index:-

CREATE INDEX index_name

ON table_name (column1, column2, ...);

4.Synonym:-

CREATE SYNONYM synonymname

FOR servername.databasesname.schemaname.objectname;

GO

5.Snapshot:-

CREATE SNAPSHOT snapshot_name as select query;

5.2 Source Code:

Table:-

```
CREATE TABLE Student_Details2(Enroll_No number(10) constraint abc  
primary key, Roll_No number(10) , Name char(50), Branch char(20));
```

1.View:-

```
CREATE VIEW V2 AS SELECT Student_Details2 ROLL_NO, NAME  
FROM Student_Details2;
```

2.Sequence: -

```
CREATE SEQUENCE Seq increment by 1 start with 1 maxvalue 1 minvalue  
1 nocycle cache 2;
```

3.Index:-

```
CREATE INDEX II ON Student_Details2(Enroll_No, Roll_No);
```

4.Synonym: -

```
CREATE SYNONYM SS FOR Student_Details2;
```

5.Snapshot-

```
CREATE SNAPSHOT Snap1 as Select * from  
Student_Details2;
```

6. Actual Resources Used:

Sr. No.	Name of resource / material	Specification	Quantity	Remarks
1	Computer	WINDOWS 11,8GB RAM, 512GB SSD	1	
2	Operating System	WINDOWS 11	1	
3	Software	Oracle Database 10G	1	
4	Browser	Google Chrome	1	

7. Outputs of Micro-Projects:

TABLE:-

The screenshot shows the Oracle Database Express Edition interface. The SQL Commands window contains the following code:

```

Create table Student2(Enroll_No number(10),Roll_No number(10),Name char(50),Branch char(10));
insert all
into Student2 values(2110950062,14,'Bavge Prathmesh','CO2I')
into Student2 values(2110950068,20,'Dhange Rohit','CO2I')
into Student2 values(2110950065,17,'Thakur Aditya','CO2I')
into Student2 values(2110950099,50,'Nalwade Kunal','CO2I')
Select * from dual;
Select * from Student2;
  
```

The Results tab shows the output of the SQL commands:

ENROLL_NO	ROLL_NO	NAME	BRANCH
2110950062	14	Bavge Prathmesh	CO2I
2110950068	20	Dhange Rohit	CO2I
2110950065	17	Thakur Aditya	CO2I
2110950099	50	Nalwade Kunal	CO2I

4 rows returned in 0.02 seconds

1.VIEW:-

The screenshot shows the Oracle Database Express Edition interface. The user is SYSTEM. The SQL Commands window contains the following code:

```
create view V2 as select Roll_No,Name from Student2;  
Select * from V2;
```

The results are displayed in a table with 4 rows:

ROLL_NO	NAME
14	Bavge Prathmesh
20	Dhange Rohit
17	Thakur Aditya
50	Nalwade Kunal

4 rows returned in 0.00 seconds. A CSV Export link is available.

2.SYNONYM:-

The screenshot shows the Oracle Database Express Edition interface. The user is SYSTEM. The SQL Commands window contains the following code:

```
select * from ss;
```

The results are displayed in a table with 4 rows:

ENROLL_NO	ROLL_NO	NAME	BRANCH
2110950062	14	Prathmesh Bavge	CO3I
2110950068	20	Rohit Dhange	CO3I
2110950065	17	Aditya Thakur	CO3I
2110950099	50	Kunal Nalwade	CO3I

4 rows returned in 0.00 seconds. A CSV Export link is available.

3.INDEX:-

The screenshot shows the Oracle SQL Developer interface. The 'SQL Commands' window is active, displaying the following SQL command:

```
create index II on Student_Details1 (Enroll_No, Roll_No);
```

The command has been executed successfully. The 'Results' pane shows the message: 'Index created.' and '0.00 seconds'. The status bar at the bottom indicates 'Language: en-us' and 'Application Express 2.1.0.00.39 Copyright © 1999, 2006, Oracle. All rights reserved.'

4.SEQUENCE: -

The screenshot shows the Oracle SQL Developer interface. The 'SQL Commands' window is active, displaying the following SQL commands:

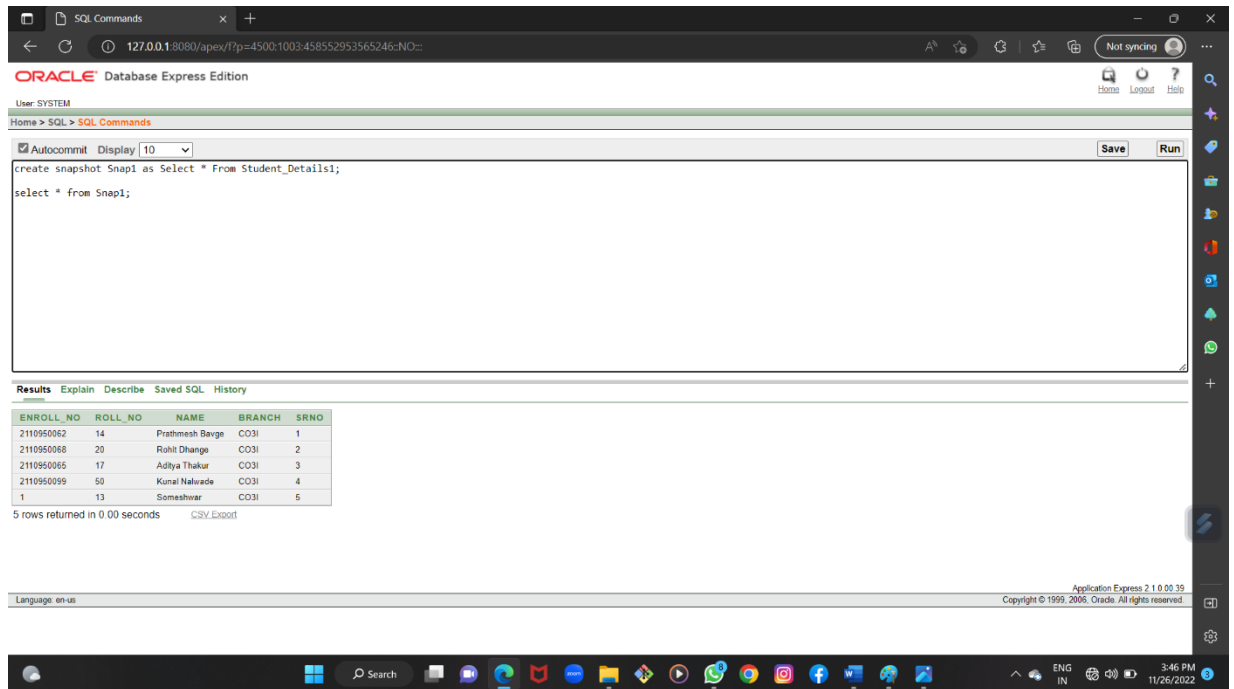
```
create snapshot Snap2 as Select * From Student_Details2;  
insert into Student_Details2 values(Seq.nextval,13, 'Someswar', 'C03I', 5);  
select * from Student_Details2;
```

The commands have been executed successfully. The 'Results' pane shows a table with 5 rows returned in 0.00 seconds. The table has the following columns: ENROLL_NO, ROLL_NO, NAME, BRANCH, and SRNO.

ENROLL_NO	ROLL_NO	NAME	BRANCH	SRNO
2110950055	17	Aditya Thakur	C03I	1
2110950099	50	Kunal Nalvade	C03I	2
2110950062	14	Prathmesh Barge	C03I	3
2110950068	20	Rohit Dhangre	C03I	4
2	13	Someswar	C03I	5

The status bar at the bottom indicates 'Language: en-us' and 'Application Express 2.1.0.00.39 Copyright © 1999, 2006, Oracle. All rights reserved.'

5.SNAPSHOT-



8. Skill developed / Learning out of this Micro-Project:

1. We learn that to understand the point of SQL, you first need to wrap your head around the concept of databases.
2. Tables and indexes are the major building blocks of SQL. It can be helpful to think of the database as the library.
3. We learn that how to construct a query to find relevant information.
4. We learn that how to write a slightly more advanced one so you can extract the information you need from a table.

9. Applications of this Micro-Project:

The data analysts use structured query language for setting and running analytical queries on a regular basis. SQL programming can be effectively used to insert, search, update, delete database records.