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Experiment 4: Implement Synonyms, Sequences, Triggers and Packages in PL/SQL

1. Create a table student with attributes id, roll_no, name, address, contact.

```
create table student(id int,roll int,name
varchar(20), address varchar(20), contact int)
```
 Table created.

2. Create a sequence to generate 'id' of a student automatically.

```
create sequence idseq
start with 1
increment by 1
```
 Sequence created.

3. Insert following values in 'Student' table.

```
insert into Student values(idseq.nextval, 1, 'Ravi',
'Mumbai',9456723450);
insert into Student values(idseq.nextval, 2, 'Tina',
'Pune',8736492301);
insert into Student values(idseq.nextval, 3, 'Raj',
'Kolhapur',7829034658);
insert into Student values(idseq.nextval, 4,
'Madhuri', 'Sangli',9959310832);
```
 1 row(s) inserted.

4. Create a trigger to prompt an error message when value entered for roll number is 0.

```
create or replace trigger sample
before insert on student for each row
when(new.roll <=0)
begin raise_application_error(-2,'Invalid input');
end;
```
 Trigger created.

5. Instantiate the created trigger by passing roll number of a student as 0.

```
insert into Student values(idseq.nextval, 0,
'Madhur', 'Goa',9959310832);
```

```
ORA-20000: Invalid input
ORA-06512: at "AMEYA.SAMPLE", line 1
ORA-04088: error during execution of trigger 'AMEYA.SAMPLE'
```

6. Create a synonym 'Stud' for 'Student' table.

```
create or replace synonym stud for student
```
 Synonym created.

7. Print the table 'Student' and 'Stud'.

```
select * from student
select * from stud
```

ID	ROLL	NAME	ADDRESS	CONTACT
1	1	Ravi	Mumbai	9456723450
2	2	Tina	Pune	8736492301
3	3	Raj	Kolhapur	7829034658
4	4	Madhuri	Sangli	9959310832

8. Create a package with following procedures:
a. Create a procedure to find name of the student if roll number is given.

```
create or replace package pack as
sname varchar(20);
procedure find(sroll student.roll%type); end pack;
```
 Package created.

```
create or replace package body pack as
procedure find(sroll student.roll%type) is
begin
select name into sname from student where roll =
sroll;
end find;
end pack;
```
 Package Body created.

b. Create a function to delete a student record if roll number is given.

```
create or replace package discard as
function delete(sroll Student.roll%type)
return int;
end discard;
```
 Package created.

```
create or replace package body discard as
function delete(sroll Student.roll%type)
return int
is
begin
delete from Student where sroll = roll;
return 1;
end delete;
end discard;
```
 Package Body created.

9. Find name of the student whose roll number is
2 using a function created in a package.

```
declare   x varchar(20);
begin
   pack.find(2);
   x := pack.sname;
   dbms_output.put_line(x);
end;
```

```
Statement processed.
 Tina
```

10. Delete a student record whose roll number is 4
using a procedure created in a package.

```
declare
   x varchar(20);
begin
   x := discard.deleted(4);
   dbms_output.put_line('Result: ' || x);
end;
```
```
Statement processed.
Result: 1
```