Day 5:

#Data integrity constraints

These are nothing but imposing restrictions on a table columns

so that if the data that is entered into column satisfies

the restriction then it is allowed to insert into the

columns otherwise it is rejected.

Types of data integrity constraints (6)

1)Not null or Mandetory constraint

2)Unique Key constraint

3)Primary key constraint

4)Check constaint

5)Foreign key constraint

6)Default constraint.

1)Not null or Mandetory constraint:

This constraint will make data entry mandetory.means you have

to insert a value in column on which Not null is declared

>create table employ209

(eno number(6) not null,

salary number(9)

);

>insert into employ209(salary) values(7000);

Error (cannot insert NULL into eno)

>insert into employ209(eno,salary) values(100,7000);

>insert into employ209(eno,salary) values(null,7000);

-->Error ((cannot insert NULL into eno)

Observe eno is declared with not null , so data entry is

mandetory.

-Mention constraint name while declaring any constraint,

because it is easy to identy which type of constraint is

declared on column by reading the constaint name

-If constraint name is not mentioned , then oracle will

give system generated random name

ex--> SYS\_C009932,SYS\_C018843

2)Unique key constraint

It is declared on a table to maintain non duplicate values.

i.e unique values on a column.

>create table employ210

(eno number(10) constraint emp210\_eno\_uk unique,

salary number(10)

);

>insert into employ210(eno,salary) values(101,9000);

>insert into employ210(eno,salary) values(101,8000);

Error( unique constraint violated)

>create table employ211

(eno number(10) constraint emp211\_eno\_nn not null constraint emp211\_eno\_uk unique,

salary number(9)

);

3)Primary key constaint

Primary key constraint is the combination of Not null

& unique key constraint

So it will not allow duplicate and null values

Primary key is used to identify the unique record/

uniquness in row.

Only one Primary key you can defined on a table

>create table employ211

(eno number(10) constraint emp211\_eno\_pk primary key,

salary number(9)

);

>insert into employ211 values(null,9000);

Error

>insert into employ211 values(100,7000);

>insert into employ211 values(100,8000);

Error

>create table employ211

(eno number(10) constraint emp211\_eno\_pk primary key,

id number(10)constraint emp211\_id\_pk primary key,

salary number(9)

);

--> error (table can have only one primary key)

#Types of primary key

1)Simple primary key

A primary key constraint that is defined using only one column of table

2)Composite primary key

A primary key constraint that is defined using more than

one column of table

In case simple primary key fails to identify the uniqe row.

then user must define composite primary key

>create table emp1

(emp\_name varchar2(20),

dept\_name varchar2(20),

salary number(10),

constraint cust\_pk primary key(emp\_name,dept\_name)

);

Note: There are some restriction on composite primary key

Can be defined using up to 32 columns of tables.

## difference between primary key & unique key constraint

-only 1 primary key you can define per table

-multiple unique keys you can define within table

-allows only one null value in the column that defined as

unique

(In Microsoft sql server )

4) Check constraint

It is declared on column to restrict the column entering only

list of values.

ex--> restrict Gender column value , either 'M' or 'F'

>create table employ516

( eno number(5),

name varchar2(20),

Gender char constraint emp\_gender\_ck check(gender in ('M','F')),

salary number(4) constraint emp\_salary\_ck check(salary in (2000,8000))

);

>insert into employ516 values(100,'kk','M',8000);

>insert into employ516 values(100,'kk','F',9000);

error (Check constaint violated)

5)Foreign key constraint:

It is also known as referential integrity constraint.

Foreign key represents a link or relationship between columns

of table.

a)FK involves 2 tables, one is parent table & other is child

table

b)The column of parent table which will get referenced by

foreign key must be either primary key or unique key.

c)column in child table can contain Null or duplicate values.

d)column of parent table & column of child table which are

participating in foreign key should be of same data type.

e)You cannot delete rows of parent table

you can delete rows of child table..

f)You cannot drop parent table first

you can drop child table first and then parent table.

--parent table (authers)

create table authors

(author\_id number(9) constraint auth\_id\_pk primary key,

author\_name varchar2(20)

);

--child table (books)

create table books

(book\_id number(9),

book\_title varchar2(20),

book\_author\_id number(9) constraint book\_id\_fk

references authors(author\_id)

);

ex--> references parent\_table\_name(parent\_column\_name)

--To check constraints declared on columns in table

>select constraint\_name,constraint\_type from user\_constraints

where table\_name='BOOKS';

######################TASK

-Create table PRODUCT with columns PROD\_ID, PROD\_NAME,

PROD\_TYPE, UNIT\_PRICE, DISCOUNT, TOTAL\_PRICE

Declare NOT NULL, UNIQUE constraints on PROD\_ID, declare check

constraint on PROD\_TYPE to allow only C for commercial, D for

domestic.

-Declare all constraints with constraint names

-Insert data and observe the error codes and error message when those

constraints are violated