|  |  |  |  |
| --- | --- | --- | --- |
|  | Customer | Scheduler | Planner |
| Flight\_instance |  |  | Insert |
| Flight |  | Update | Insert |
| Seat\_Reservation | Update | Update |  |
| Booking | Insert |  |  |
| Airplane |  |  | Insert |
| Airport |  |  | Insert |

**Role table**

**Normalization**

**UNF**

1. List attributes separating them by ‘+’
2. Remove duplicates or derived fields
3. Surround repeating groups with {}
4. Identify one or more attributes that act as a primary key

**1NF**

1. Move repeating into a new form (e.g. F1)
2. Copy the key from the original (Form) into F1 as foreign key (Mark with \*).
3. Find the key to F1

**2NF – A form that has a simple key is already in second normal form**

* Check the dependencies of each non-key attribute
* Move any attributes dependent on part of the key to another form
* Copy the part key as primary key to the new form, marking it as a foreign key in the original.

**3NF – for all table with more than one non-key attribute**

* Check for **dependencies between non-key attributes.**
* move any attribute that is dependent on another non-key attribute to a new form.
* Copy the determining attribute as a primary key and mark it as a foreign key in the original.

**PLSQL**

**SERVER ON**

**DECLARE**

**BEGIN**

**EXCEPTION**

**WHEN OTHER THEN**

**DBMS\_OUTPUT.PUT\_LINE(SQLCODE||’ ’||SQLERRM||’ ’||V\_CURRENTTOP);**

**DBMS\_OUTPUT.PUT\_LINE(‘Rolling back’);**

**ROLLBACK;**

**END**

SET SERVEROUTPUT ON

DECLARE

V\_SNAME SSTUDENT.SNAME%TYPE := ‘&NAME’;

V\_SNO SSTUDENT.SNO%TYPE;

BEGIN

SELECT SNO INTO V\_SNO FROM SSTUDENT WHERE SNAME = V\_SNAME;

DBMS\_OUTPUT.PUT\_LINE(SNO);

EXCEPTION

WHEN OTHERS THEN

DBMS\_OUTPUT.PUT\_LINE(SQLCODE||’ ’||SQLERRM);

DBMS\_OUTPUT.PUT\_LINE(‘Rolling Back’);

ROLLBACK;

END

SET SERVEROUTPUT ON

DECLARE

BEGIN

EXCEPTION

WHEN OTHERS THEN

END;

UNF

+ DERIVE & DUPLICATE {} PRIMARY

1ST NF REMOVE REPEATING GROUPS

F -> F1

PRIMARY -> FOREIGN

2ND NF PART KEY DEPENDCIES

MOVE PART KEY DEPENCIES

FOREIGN -> PRIMARY

3RD SWEEP FOR ANY NON-KEY DEPENDENCIES

LIST ATTRIBUTES

FOREIGN->PRIMARY