Laboratory 11
Active Data Warehousing Optional Exercise

Computer Lab Activities

Using the case study discussed in the "Automatic Updates of Data Warehouse" section earlier in this week lecture

- write the complete SQL commands for Level-0, Level-1 and Level-2 star schemas.
- Test the system by inserting new records into the operational database, and check that the correct updates have been made in all levels of the star schemas in the data warehouse.
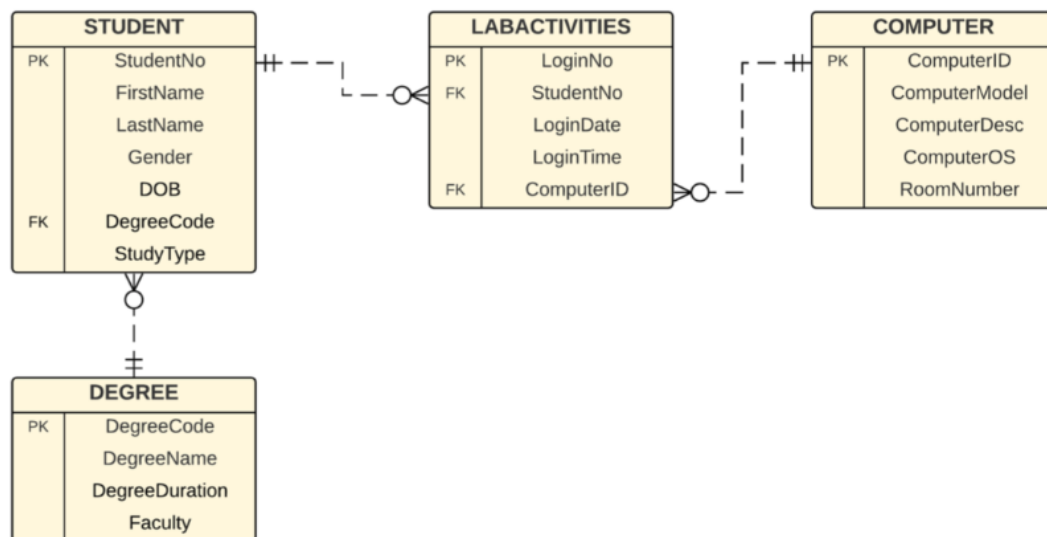

Fig.1. E/R diagram for the Computer Lab Activities case study

The operational database tables can be copied from the **ptetest** account, using:

```
        Select * from chapter18.<table_name>;
Or
        Create Table <your_table_name> As
        Select …
        From chapter18.<table_name>
        Where …
```

E.g:
```
        select * from chapter18.student;
        select * from chapter18.labactivities;
        select * from chapter18.degree;
        select * from chapter18.computer;
```
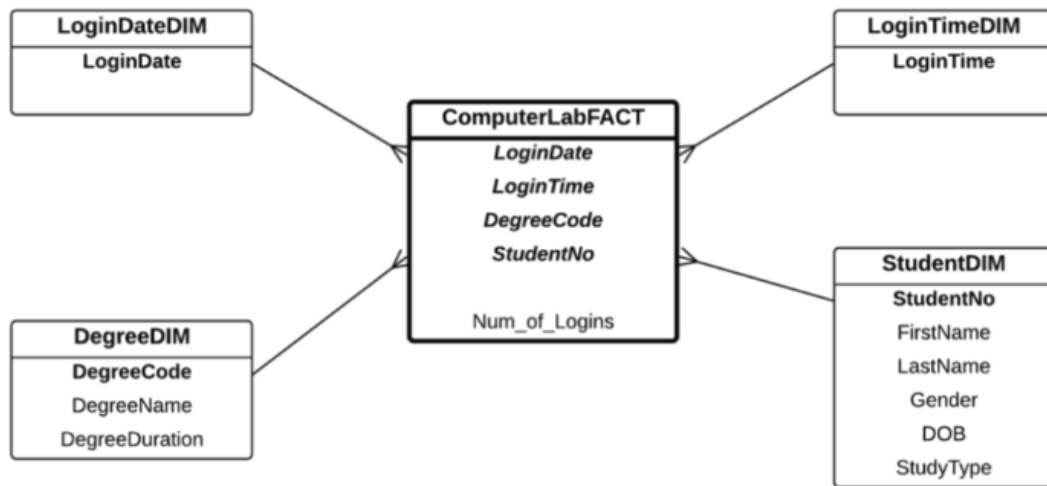
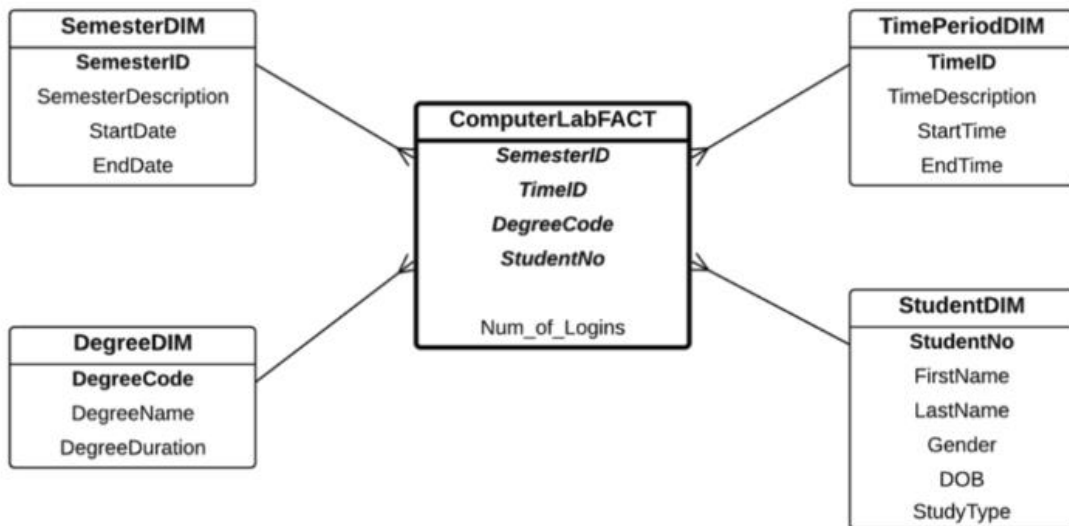Fig.2. Level-0 star schema for the Computer Lab Activities case study

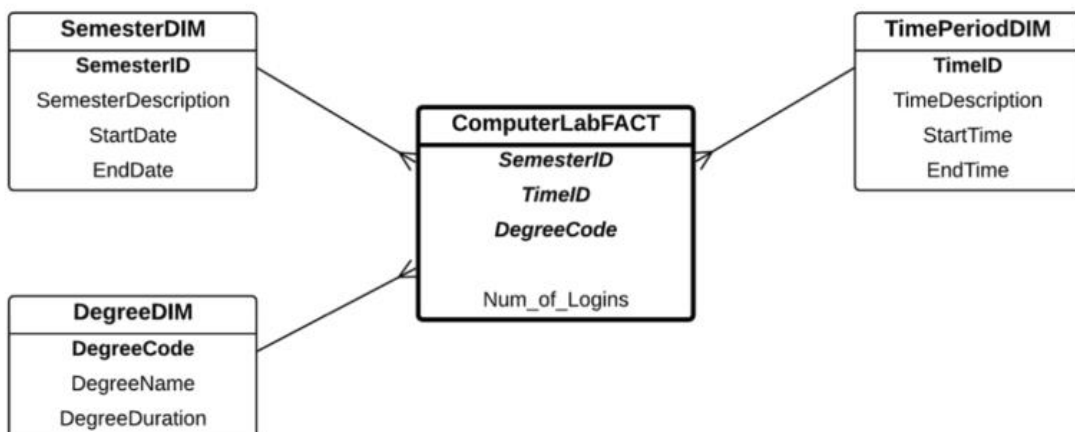Fig.3.Level-1 star schema for the Computer Lab Activities case study

Fig.4. Level-2 star schema for the Computer Lab Activities case study

Test the system by inserting the following new records into the operational database..

--Test:insert a new student record in Student Table;

insert into Student values ('S08','Tony','Liu','Male', to_date('13/08/1994','dd/mm/yyyy'),'Full Time','D03');

-- Test : insert a new record in LabActivities Table;

insert into LabActivities values ('L12','S08',to_date('01/03/2020','dd/mm/yyyy'), to_date ('18:16:43','hh24:mi:ss'),'C02');

As the result of inserting a new record in the student table and this student's lab activities into the Lab Activities table, related updates have been made in all levels of the star schemas in the data warehouse.

E.g: a new row was added in the star schema level 2. [S1(semesterID),3(timeid),D03(degreeCode)]

SEMESTERID	TIMEID	DEGREECODE	NUM_OF_LOGINS
1 S1	1	D01	1
2 S1	2	D01	1
3 S1	2	D02	1
4 S1	2	D03	1
5 S1	3	D01	4
6 S1	3	D02	1

Star schema level 2(before inserting a new record)

SEMES...	TIMEID	DEGREECODE	NUM_OF_LOGINS
1 S1	1	D01	1
2 S1	2	D01	1
3 S1	2	D02	1
4 S1	2	D03	1
5 S1	3	D01	4
6 S1	3	D02	1
7 S1	3	D03	1

Star schema level 2(after inserting a new record)

THE END