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| Hands-on Exercise |
| **Objective:** Associates should use the DDL statements and create the tables, constraints identified. Also they should use the appropriate DML statements to load the table with student information.  **For the Associates:** Associates can refer to the oracle documentation present in the following link for the DDL and DML syntax.  <http://docs.oracle.com/html/A95915_01/toc.htm> |

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| **Problem # 1** **Creating Tables :** Create following tables using Oracle Client and DDL’s.   1. Create ***Student\_Info\_<employee\_id>*** table – This table is used for storing the student personal information.    1. Reg\_Number – Primary Key - Varchar    2. Student\_Name - Varchar(30) not null    3. Branch – Varchar    4. Contact\_Number – Varchar    5. Date\_of\_Birth-Date, not null    6. Date\_of\_Joining-Date – Default value system date.    7. Address-Varchar(250)    8. Email\_id-Varchar(250) 2. Create **Subject\_Master*\_<employee\_id>*** table – This table is used for storing the subjects information which are delivered in the university.    1. Subject\_Code- Primarykey-varchar2(10)    2. Subject\_Name- Varchar, not null    3. Weightage- Number(3), not null 3. Create **Student\_Marks*\_<employee\_id>***table -- This table holds the marks obtained by a student in a particular subject in a semester. The marks are stored as records in this table. For example if a student S1 scores 50% in networks and 70% in microprocessor in semester 4. The table will have two records  |  |  |  |  | | --- | --- | --- | --- | | Reg Number | Subject Code | Semester | Marks | | S1 | NWS | 4 | 50 | | S1 | MIC | 4 | 70 |   Any new subject addition does not need a change in table design all it needs a new subject code and a new row in this table.   * 1. Reg\_Number-Foreignkey (Student\_Info)-Varchar   2. Subject\_Code-Foreignkey (Subject\_Master)-varchar2(10)   3. Semester-Number(3) not null   4. Marks-Number (3) default value 0  1. Create **Student\_Result*\_<employee\_id>*** table -- For storing the student results.    1. Reg\_Number-Foreignkey-Varchar    2. Semester-Number(3) Not null    3. GPA-Number (5,3)- Not Null    4. Is\_Eligible\_Scholarship char(3) Default value is Yes   **NOTE:** Reg\_Number and Semester Number should be composite primary keys.  **Problem # 2 Working with constraints:**   1. Create a constraint which does not allow repeated entries of subjects having the same Subject Name. 2. Create a constraint which does not allow two students having the same Contact Number. 3. Create a constraint which does not allow date of birth after date of joining. 4. Create a constraint that does not allow value greater than 100 be inserted into Marks. 5. Create a constraint which mandates GPA values to be less than or equal to 10. 6. Create a constraint which mandates that value for Is\_Eligible\_Scholarship is either ‘Y’ or ‘N’.   **Problem # 3 Loading tables using DML:**  **NOTE:** Use the data mentioned in [Appendix1 section](#Appendix) to load the tables.   1. Load student information into Student\_Info table. 2. Load information on subjects into Subject\_Master table. 3. Load marks obtained by students in each subject in each semester into Student\_Marks table. 4. Load the GPA of the student obtained in each semester into Student\_Result table along with the information whether the student is eligible for scholarship or not.   **Problem # 4 Perform the following operations:**   1. Change the registration number of the James as MC101212. 2. Change the subject code for the subject Data structures as DS0112. 3. Enter details of a new subject into table ***Subject\_Master\_<employee\_id>*** without weightage. What is the output you noticed? 4. Change the contact number of Paulson as 8912457875. 5. Change the marks for James for DCF subject as 120. What is the output you noticed? 6. Change the GPA for Mike as 11. What is the output you noticed? |

# Appendix 1:

## Student\_Info Table\_<employee\_id>:

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| Reg\_Number | Student\_Name | Branch | Contact\_Number | Date\_of\_Birth | Date\_of\_Joining | Address | Email\_id |
| MC101301 | James | MCA | 9714589787 | 12-jan-1984 | 08-jul-2010 | No 10,South Block,Nivea | james.mca@yahoo.com |
| BEC111402 | Manio | ECE | 8912457875 | 23-feb-1983 | 25-jun-2011 | 8/12,Park View,Sieera | manioma@gmail.com |
| BEEI101204 | Mike | EI | 8974567897 | 10-feb-1983 | 25-aug-2010 | Cross villa,NY | mike.james@ymail.com |
| MB111305 | Paulson | MBA | 8547986123 | 13-dec-1984 | 08-aug-2010 | Lake view,NJ | paul.son@rediffmail.com |

## Subject\_Master table\_<employee\_id>: Green ones are semester 1 and blue ones are semester 2 subjects.

|  |  |  |
| --- | --- | --- |
| Subject\_Code | Subject\_Name | Weightage |
| EE01DCF | DCF | 30 |
| EC02MUP | Microprocessor | 40 |
| MC06DIP | Digital Image Processing | 30 |
| MB03MAR | Marketing Techniques | 20 |
| EI05IP | Instrumentation Precision | 40 |
| CPSC02DS | Data Structures | 40 |

**Student\_Marks\_<employee\_id>:**  The marks needs to be loaded as follows.

For students James and Manio records needs to be inserted for semester 1 for the first three subjects in the subject\_master tables.

For the remaining students the marks needs to be inserted for all the subjects for the all the semesters.

|  |  |  |  |
| --- | --- | --- | --- |
| Reg Number | Subject Code | Semester | Marks |
| MC101301 | EE01DCF | 1 | 75 |
| MC101301 | EC02MUP | 1 | 65 |
| MC101301 | MC06DIP | 1 | 70 |
| BEC111402 | EE01DCF | 1 | 55 |
| BEC111402 | EC02MUP | 1 | 80 |
| BEC111402 | MC06DIP | 1 | 60 |
| BEEI101204 | EE01DCF | 1 | 85 |
| BEEI101204 | EC02MUP | 1 | 78 |
| BEEI101204 | MC06DIP | 1 | 80 |
| BEEI101204 | MB03MAR | 2 | 75 |
| BEEI101204 | EI05IP | 2 | 65 |
| BEEI101204 | CPSC02DS | 2 | 75 |
| MB111305 | EE01DCF | 1 | 65 |
| MB111305 | EC02MUP | 1 | 68 |
| MB111305 | MC06DIP | 1 | 63 |
| MB111305 | MB03MAR | 2 | 85 |
| MB111305 | EI05IP | 2 | 74 |
| MB111305 | CPSC02DS | 2 | 62 |

**Student\_Results\_<employee\_id>:** The 5 student results needs to be calculated for the semester and stored. For data per se load the table with some arbitrary GPA.

|  |  |  |  |
| --- | --- | --- | --- |
| Reg Number | Semester | CGPA | Is\_Eligible\_Scholarship |
| MC101301 | 1 | 7.5 | Y |
| BEC111402 | 1 | 7.1 | Y |
| BEEI101204 | 1 | 8.3 | Y |
| BEEI101204 | 2 | 6.9 | N |
| MB111305 | 1 | 6.5 | N |
| MB111305 | 2 | 6.8 | N |