**Lab Task – 4 – Constraint Declaration**

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1. Differentiate between MySQL and Oracle - (5 Main Points)

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| **MySQL** | **Oracle** |
| **MySQL**is a database management system sponsored by a Swedish company named MySQL AB. | **Oracle** is the leading database management system released by Oracle Corporation. |
| **Type** | |
| It is an open Source relational database management system | It is an Object-Relational Database Management System (ORDBMS). |
| **Release** | |
| It was released in 1995. | It was released in 1980. |
| **Cost** | |
| It is free and open-source. It is licensed under the GNU. | It is licensed for commercial purposes, but it provides the express edition for free. The express edition is recommended for education purpose, students only. |
| **Scalability** | |
| MySQL database is used for small and big businesses. | Oracle database is used for very large scale deployments. |
| **Null Values** | |
| MySQL supports the null value. | Oracle doesn’t supports the null value. |
| **Characters** | |
| MySQL support only two characters that are CHAR and VARCHAR. | Oracle supports four different characters that are CHAR, VARCHAR2, NCHAR, and NVARCHAR2. |
| **XML Support** | |
| It does not support XML. | It supports XML. |
| **Locking Facility** | |
| MySQL has only a table locking facility. | Oracle has table locking as well as a row locking facility. |
| **Operating System Support** | |
| It supports the following Operating System:   * Windows * Mac OS X * Linux * UNIX * z/OS * BSD * Symbian * AmigaOS | It supports the following Operating System:   * Windows * Mac OS X * Linux * UNIX * z/OS |
| **Language support** | |
| MySQL support only SQL language. | Oracle supports both SQL and PL/SQL languages. |

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1. **What is NUMBER datatype in oracle? is this better than integer datatype**

**Number** is a built-in datatype in oracle. It is used for storing the numeric values that can be negative and positive. The syntax of NUMBER datatype is:

**NUMBER (Precision, Scale)**

Where

**Precision:** It is the number of digits in a numeric value. It ranges from 1 to 38.

**Scale:** It is the number of digits to the right of the decimal point in a numeric value. It ranges from -84 to 127.

**Is the NUMBER better than integer datatype?**

Yes, Number datatype is better than integer datatype because Integer is a constrained number. As it is equal to NUMBER (38, 0), so the decimal place will be rounded. Integer is slower than NUMBER because is a constrained number that will take additional CPU cycles to enforce the constraint.

**--------------------------------------------------------**

1. **Which datatype is used for storing date & time in oracle?**

The DATE datatype is used for storing date and time. Date and time can be represented in number and character datatypes.  It has a **range** from January 1, 4712 BCE through December 31, 9999 CE. Oracle stores the following information in Date datatype:

* Century
* Year
* Month
* Date
* Hour
* Minute
* Second

The size of Date is fixed at 7 bytes but it can vary from 7 to 11 bytes, depending on the precision.

**--------------------------------------------------------**

1. **Create a sample table, the table should have the same structure as employee table. (Execute the query)**

CREATE TABLE SAMPLE\_EMPLOYEE

(

EMPLOYEE\_ID NUMBER (6, 0) PRIMARY KEY,

FIRST\_NAME VARCHAR2 (20 BYTE),

LAST\_NAME VARCHAR2 (25 BYTE) NOT NULL,

EMAIL VARCHAR2 (25 BYTE) NOT NULL UNIQUE,

PHONE\_NUMBER VARCHAR2 (20 BYTE),

HIRE\_DATE DATE NOT NULL,

JOB\_ID VARCHAR2 (10 BYTE) NOT NULL,

SALARY NUMBER (8, 2),

COMMISSION\_PCT NUMBER (2, 2),

MANAGER\_ID NUMBER (6, 0),

DEPARTMENT\_ID NUMBER (4, 0),

CHECK (salary > 0),

FOREIGN KEY (DEPARTMENT\_ID)

REFERENCES DEPARTMENTS (DEPARTMENT\_ID),

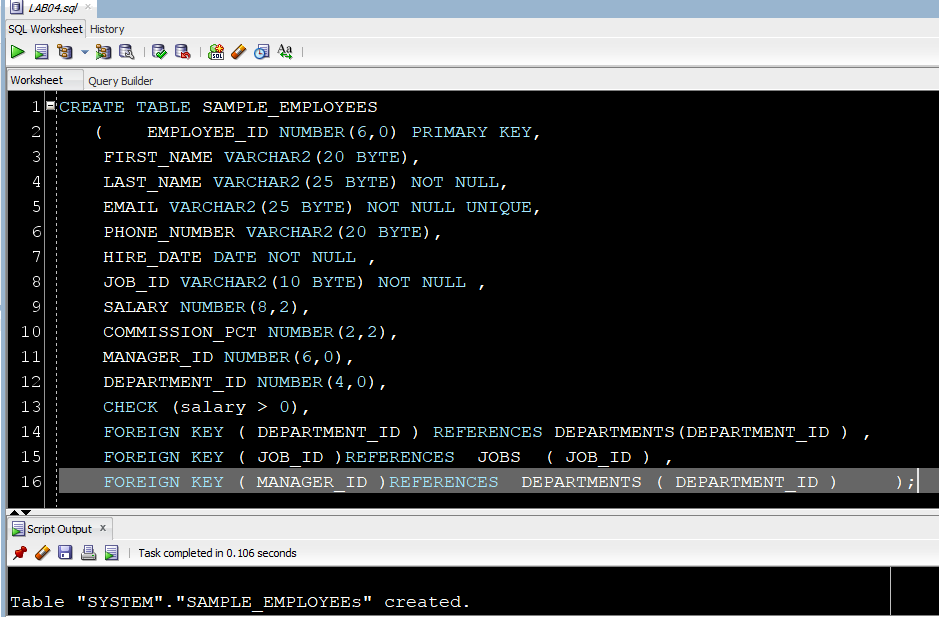
FOREIGN KEY (JOB\_ID)

REFERENCES JOBS (JOB\_ID),

FOREIGN KEY (MANAGER\_ID)

REFERENCES DEPARTMENTS (DEPARTMENT\_ID)

);

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