"Exp 6: Demonstrate integrity constraints: PRIMARY KEY, FOREIGN KEY, CHECK, NOT NULL, DEFAULT."

1] Creating a table with aforementioned integrity constraints & inserting values while obeying the enforced rules.

```
mysql> CREATE TABLE emp (
    -> EmpNo int PRIMARY KEY,
    -> EName varchar(20) NOT NULL,
    -> Salary int CHECK(Salary > 0),
    -> Loc varchar(20) DEFAULT 'Mumbai',
    -> DeptNo int REFERENCES Dept(DeptNo));
Query OK, 0 rows affected (0.03 sec)

mysql> INSERT INTO emp (EmpNo, EName, Salary, Loc, DeptNo)
    -> VALUES (512, 'Krishna', 80000, 'Jalgaon', 22),
    -> (412, 'Bhuvan', 70000, 'Jalgaon', 33);
Query OK, 2 rows affected (0.01 sec)
Records: 2 Duplicates: 0 Warnings: 0

mysql>
```

- 2] Trying to insert value while violating enforced constraints/rules.
- a] NOT NULL error: -

```
mysql> INSERT INTO emp (EmpNo, EName, Salary, Loc, DeptNo)
-> VALUES (512, NULL, 0, 'Mumbai', 11);
ERROR 1048 (23000): Column 'EName' cannot be null
```

b] PRIMARY KEY error:-

```
mysql> INSERT INTO emp (EmpNo, EName, Salary, Loc, DeptNo)
-> VALUES (512, 'Tushar', 68000, 'Mumbai', 11);
ERROR 1062 (23000): Duplicate entry '512' for key 'emp.PRIMARY'
```

c] CHECK error: -

```
mysql> INSERT INTO emp (EmpNo, EName, Salary, Loc, DeptNo)
-> VALUES (522, 'Tushar', 0, 'Mumbai', 11);
ERROR 3819 (HY000): Check constraint 'emp_chk_1' is violated.
```

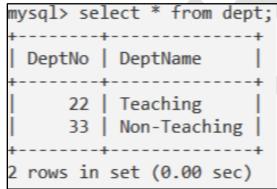
3] Successful insertion (as constraints/rules are obeyed).

4] DEFAULT constraint.

```
mysql> INSERT INTO emp (EmpNo, EName, Salary, DeptNo) VALUES (1, 'John', 50000,22);
Query OK, 1 row affected (0.01 sec)
mysql> select * from emp;
EmpNo EName
                | Salary | Loc
                                  DeptNo
     1 John
                  50000 | Mumbai
                                       22
   412 | Bhuvan | 70000 |
                                       33
                          Jalgaon
   512 | Krishna |
                  80000 | Jalgaon |
                                       22
   522 | Tushar | 68000 | Mumbai
                                       22
4 rows in set (0.01 sec)
```

5] FOREIGN KEY error.

A] dept Table from where foreign key is referenced: -



B] Trying to insert DeptNo in Foreign Key column of "emp" table which is not referenced in the Primary Key column of "dept" table generates following error : -

```
mysql> insert into emp values (420, 'Nishant', 69000, 'Jalgaon', 11);
ERROR 1452 (23000): Cannot add or update a child row: a foreign key constraint fails (`manual`.`emp`, CONSTRAINT `fk_emp_deptno` FOREIGN KEY (`DeptNo`) REFERENCES `dept` (`DeptNo`))
```