

**S. V. National Institute of Technology Surat**  
**Department of Computer Science and Engineering**  
**Database Management System**

**Tutorial 3**

**A. Draw an ER diagram for the following system:**

**1) SVNIT Student Enrollment System (SE)**

SVNIT offers admissions for B. Tech. (8 Semesters) and M. Tech. (4 Semesters) degrees in Engineering branches like Computer Science and Engineering, Mechanical Engineering, Electrical Engineering, etc. Each engineering branch has intakes of 60 students.

Students' personal information, academic performance for each semester's subject wise, are managed by the SE section of the SVNIT.

The SE section maintains the exams' record and prepares the results of the students.

For each academic year the SE section maintains the academic result's records of students together with the convocation date of the students' degree to prepare different types of reports.

**2) SVNIT Training and Placement Management System (TnP)**

SVNIT offers admissions for B. Tech. (8 Semesters) and M. Tech. (4 Semesters) degrees in Engineering branches like Computer Science and Engineering, Mechanical Engineering, Electrical Engineering, etc.

Students' personal information, academic performance for each semester, extra curricular activities of students like internships, workshop, competition are managed by the TnP section of the SVNIT.

The TnP section also manages the different company information like company name, address, contact numbers, website, email, preferred Engineering branches, job roles, only B.Tech./only M.Tech/Both Degrees, packages offered by company, minimum CGPA criteria, mode of tests (written test, GD, interview, etc.), Arrival Date, No. of Vacancy.

For each academic year the TnP section maintains the placement records of students

together with an offered joining date to prepare different types of reports.

Prepare separate ER diagram, for following two types of offers provided by TnP:

- a) Students can have ONLY a single job offer.
- b) Students can have multiple job offers.

### **3) Book Bank Management System (BBM)**

SVNIT has a huge book library. BBM manages the book information like book title, ISBN number, authors, publisher, year of publication, price, number of copies, etc. Enrolled students can borrow the book from the library for the whole semester and can return the book at the end of the last exam day of that semester. If a book is not returned before the return date, then a penalty will be taken from the student. The penalty is 1 Rupee for each delay day.

For each academic year the BBM section maintains the book transaction records of issues and returns to prepare different types of reports.

#### **B. Map the ER diagrams to relations for the above systems.**