Ass 1- A: Draw E-R diagram for different Organizations

1. Construct an E-R diagram for **university** database with following entity sets and relationship sets.

   The entity sets and their attributes below, with primary keys underlined:

   - *classroom: with attributes (building, room number, capacity).*
   - *department: with attributes (dept_name, building, budget).*
   - *course: with attributes (course_id, title, credits).*
   - *instructor: with attributes (i_ID, name, salary).*
   - *section: with attributes (sec_id, semester, year):**weak depends on course***
   - *student: with attributes (s_ID, name, tot_cred).*
   - *Time_slot: with attributes (time_slot_id, day, start_time, end_time).*

   The relationship sets in our design are listed below:

   - *teaches (i_ID, course id, sec id, semester, year)*
   - *takes (s_ID, course id, sec id, semester, year, grade)*
   - *prereq (course id, prereq id)*
   - *advisor (s ID, i ID)*
   - *sec_course (course id, sec id, semester, year)*
   - *sec_time_slot (course id, sec id, semester, year, time slot id)*
   - *sec_class (course id, sec id, semester, year, building, room number)*
   - *inst_dept (i_ID, dept_name)*
   - *stud_dept (s_ID, dept_name)*
   - *course_dept (course id, dept_name)***.**

2. Construct an E-R diagram for **bank** database with following entity sets and relationship sets The entity sets and their attributes below, with primary keys underlined:

- *branch (branch-name, branch-city, assets)*
- *customer (customer-name, customer-street, customer-city)*
- *account (account-number, balance)*
- *loan (loan-number, amount)*
- *payment (payment_number, payment_date, payment_amount) :* ***weak depends on loan***
- *employee(employee_name, telephone_number,dependent_name, start_date, employment_length)*

The relationship sets in our design are listed below:

- *depositor (customer-name, account-number)*
- *borrower (customer-name, loan-number)*
- *loan_branch(loan-number,branch-name)*
- *account_branch(account-number, branch-name)*
- *loan_payment(loan-number , payment_number)*
- *customer_banker(customer-name,employee_name, type)*

3. Construct an E-R diagram for **property** database with following entity sets and relationship sets.

The entity sets and their attributes below, with primary keys underlined:

- *Branch (branchNo, street, city, postcode)*
- *Staff (staffNo, fName, lName, position, sex, DOB, salary,)*
- *PropertyForRent (propertyNo, street, city, postcode, type, rooms, rent)*
- *Client (clientNo, fName, lName, telNo, prefType, maxRent)*
- *PrivateOwner (ownerNo, fName, lName, address, telNo)*

The relationship sets in our design are listed below:

- *Viewing (clientNo, propertyNo, viewDate, comment)*
- *Registration (clientNo, branchNo, staffNo, dateJoined)*
- *Owns(ownerNo, propertyNo)*

4. Construct an E-R diagram for **company** database with following entity sets and relationship sets.

The entity sets and their attributes below, with primary keys underlined:

- *department (dname, dnumber, mgr_ssn, mgr_start_date)* ***:mgr_ssn is not foreign key***
- *employee (fname, minit, lname, ssn, bdate, address, sex: {M,F}, salary, super_ssn).*
- *dept_locations (dnumber, dlocation)*
- *project (pname, pnumber, plocation)*
- *dependent (dependent_name, sex, bdate, realtionship)****weak depends upon employee***

The relationship sets in our design are listed below:

- *works_on(ssn, pnumber, hrs).*
- *work_for (ssn, dnumber)*
- *controls (dnumber, pnumber)*
- *dependents_of (ssn, dependent_name)*