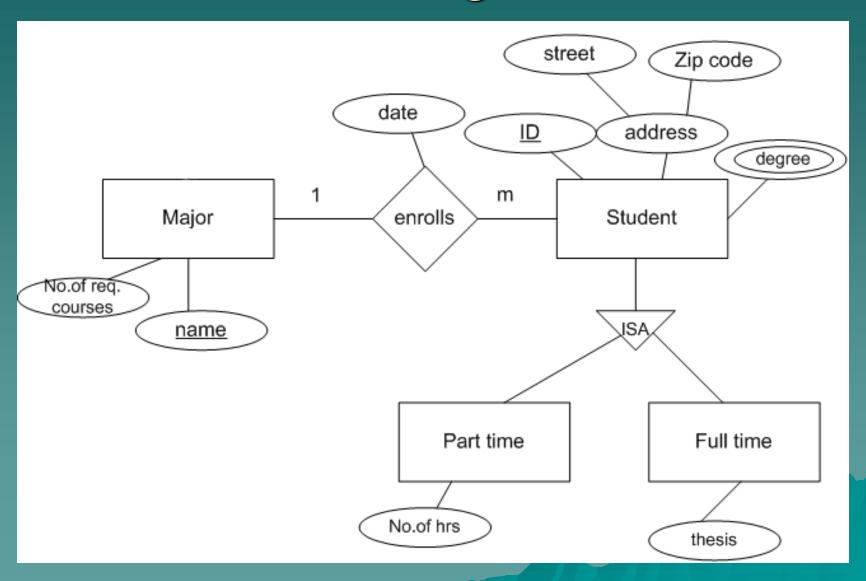# Oracle Object-Relational Database Example 2

CS 5513

ER Diagram

Type Creations – for Multi-valued and Composite Attributes

- CREATE TYPE degree_typ AS varray(5) OF varchar2(25);

- CREATE TYPE address_typ AS object(
  street varchar2(25),
  zipcode number(5));

Type Creations – for a Simple Entity

- CREATE TYPE major_typ AS object(
  name varchar2(25),
  noofcourses number(2));

Type Creations – Using User Defined Types

◆ CREATE TYPE student_typ AS object(
     ID varchar2(9),
     degree degree_typ,
     address address_typ)
     NOT FINAL;

Type Creations – Showing Inheritance

- CREATE TYPE parttime_typ **UNDER** student_typ(
    noofhrs number(3));

- CREATE TYPE fulltime_typ **UNDER** student_typ(
    thesis varchar2(25));

Type Creations - for a Relation

◆ CREATE TYPE enrolls_typ AS object(
     ID student_typ,
     major major_typ,
     date_enroll date);

Table Creations (1)

◆ CREATE TABLE major_tab of major_typ
    (name primary key)
    OBJECT IDENTIFIER IS PRIMARY KEY;

◆ CREATE TABLE student_tab of student_typ
    (ID primary key)
    OBJECT IDENTIFIER IS PRIMARY KEY;

Table Creations (2)

- CREATE TABLE enrolls_tab OF enrolls_typ (
     PRIMARY KEY (student.ID),
     FOREIGN KEY (major.name) REFERENCES major_tab,
     FOREIGN KEY (student.ID) REFERENCES student_tab)
     OBJECT IDENTIFIER IS PRIMARY KEY;

- CREATE TABLE parttime_tab of parttime_typ
     (ID PRIMARY KEY)
     OBJECT IDENTIFIER IS PRIMARY KEY;

- CREATE TABLE fulltime_tab of fulltime_typ
     (ID PRIMARY KEY)
     OBJECT IDENTIFIER IS PRIMARY KEY;

Insertion (1)

◆ A normal insertion:

INSERT INTO major_tab values ('Computer Science', 11);

◆ An insertion to a table that has complex attributes:

INSERT INTO student_tab

VALUES('007007007',

degree_typ('BE in MATH', 'MS in CS'),

address_typ('Asp ave',73019));

Insertion (2)

◆ An insertion to a table whose type has subtypes:
INSERT INTO fulltime_tab

VALUES('007007007', degree_typ('BS in MATH','MS in CS'), address_typ('Elm ave',73019), 'Mobile Database System');

◆ An insertion to a table that has references to other tables:
INSERT INTO enrolls_tab

SELECT VALUE(S), VALUE(M), '09-May-2008'

FROM major_tab M, student_tab S

WHERE M.name='Computer Science' AND S.id = '007007007';

Selection (1)

◆ A normal selection:

    SELECT *

    FROM major_tab;

◆ A selection from a table that has complex attributes:

    SELECT S.ID, S.address.street, S.address.zipcode

    FROM student_tab S;

Selection (2)

◆ A selection from a table that has references to other tables:

SELECT date_enroll, (major).name, (student).id

FROM enrolls_tab;