

INFO 605 Term Project

Educational Database

Jennifer Bochenek

1) Table of Contents

2) Requirements:	1
3) ER Model:.....	2
5) Data Dictionary:	3
6) DDL:	9
7) DML:	14

2) Requirements:

This is a system for storing standardized letters of recommendation to be used to send to universities for the purpose of graduate admission packets. Students, referred to as applicants, make an account, when they make an account an applicant ID is generated that uniquely refers to the email they used to make the account. When they make the account, they fill out their name (first, middle, and last names), social security number, what university are currently attending, if any, what their undergraduate major was, what year they graduated or will graduate from their undergraduate program, their birthdate, race/ethnicity, and address. Addresses include a street, city, state (or province), country, and zip code. Finally, they fill in their phone number.

Once registered, an applicant invites a rater to the system. This rater will fill out an evaluation for that application. Each applicant can invite as many raters as they want, and raters may be invited by multiple applicants, but each rater only makes one account linked to an email address. When they make the account, they fill in their first, middle, and last name as well as their address. Similar to the applicants, the address accounts for a street address, city, state or province, country, and zip. They also fill in their department affiliation and organization name, if any as well as their title.

Each invitation results in an evaluation, this evaluation is identified by the evaluation ID. In this evaluation, the rater declares how long they've known the applicant, and in what capacity they know them (such as teacher-student, mentor, employer, coworker, family connection), and then they provide scores on a 1 to 10 basis (with 10 being the best) for applicant's skill in content knowledge, communication, teamwork, resilience, planning and organization, and ethics. Evaluations can also include text, similar to a letter of recommendation, for each of those domains. Finally, raters are asked to provide how strict or lenient they were for this evaluation with 1 being most lenient and 10 being most strict.

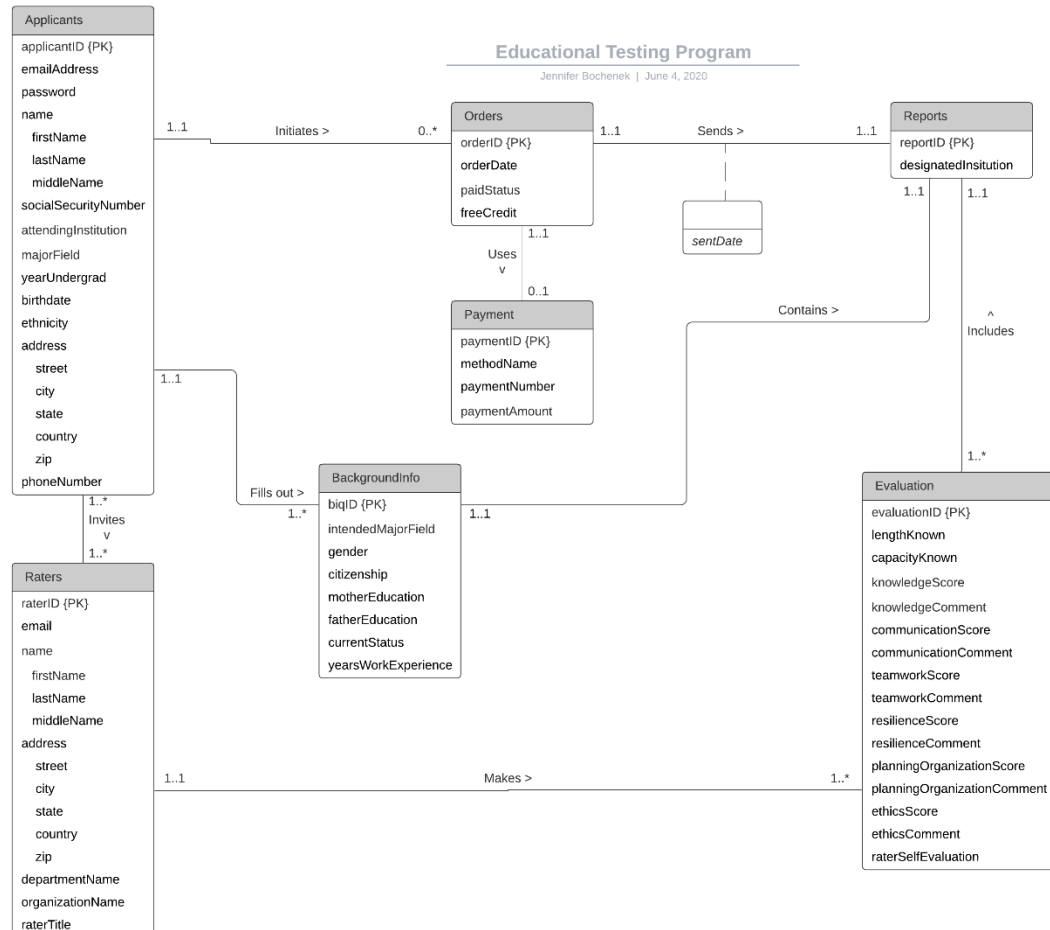
When an applicant wants to send out a report to schools, they have to do several things. The first is fill out a background information questionnaire [BIQ]. This BIQ includes questions that are most likely to change over time, and thus are only triggered to be answered when an applicant wants to send out a report. Thus an applicant may answer the BIQ multiple times. Each BIQ response is identified by a unique BIQ ID. Then applicants fill in their intended major, their gender,

citizenship, their mother(s)' and father(s)' education, current status (in school, graduated, etc.), and how many years of work experience they have.

The second thing they is initiate an order. An applicant can initiate multiple orders, the first 5 are free, each order is specific a report. Orders are identified by an order ID, with an associated order date, payment status, and if it is one of the free credits, if it is not a free report, then payment must be rendered. Payment is determined by paymentID, how payment was rendered (paypal, credit or debit card, bank transfer), the payment number (card number, or bank account, etc) and how much was due. Once paid, an order is sent to the designated institution. The date that the report is sent is recorded.

Each report has a report ID and includes the selected evaluations, the associated BIQ responses, the applicant information and the rater information that is pertinent. Each report is sent to only one designated institution.

3) ER Model:



4) Database Schema:

. Note: zip codes were not translated to 3rd normal form due to zip codes not following state lines. I could not find any other dependencies in my data.

1. Applicants(applicantID, emailAddress, password, firstName, lastName, middleName, socialSecurityNumber, attendingInstitution, majorField, yearUndergrad, birthdate, ethnicity, street, city, state, country, zip, phonenumber)
2. BackgroundInfo(biqID, intendedMajorField, gender, citizenship, motherEducation, fatherEducation, currentStatus, yearsWorkExperience, applicantID)
3. Invites(applicantID, raterID, evaluationID)
4. Raters(raterID, firstName, lastName, middleName, street, city, state, country, zip, departmentName, organizationName, raterTitle)
5. Evaluations(evaluationID, lengthKnown, capacityKnown, knowledgeScore, knowledgeComment, communicationScore, communicationComment, teamworkScore, teamworkComment, resilienceScore, resilienceComment, planningOrganizationScore, planningOrganizationComment, ethicsScore, ethicsComment, raterSelfEvaluation, raterID, reportID)
6. Orders(orderID, orderDate, paidStatus, freeCredit, paymentID, reportID)
7. Payment(paymentID, methodName, paymentNumber, paymentAmount)
8. Sends(orderID, reportID, sentDate)
9. Reports(reportID, designatedInstitution, biqID)

5) Data Dictionary:

Applicants: Gives static information about the students in the system.

Attribute Name	Description	Datatype	Domain	Nullable	PK	FK
APPLICANTID	ID of applicant	NUMBER(8,0)	00000000-99999999	No	Yes	No
EMAILADDRESS	email address	VARCHAR2(50)	All	No	No	No
FIRSTNAME	first name of applicant	VARCHAR2(20)	All	No	No	No
LASTNAME	last name of applicant	VARCHAR2(20)	All	No	No	No
MIDDLENAME	middle name of applicant	VARCHAR2(8)	All	Yes	No	No
ATTENDINGINSTITUTION	name of undergrad	VARCHAR2(50)	All	Yes	No	No

	uate or previous institution					
MAJORFIELD	Undergraduate major or field of schooling	VARCHAR2(50)	All	Yes	No	No
YEARUNDERGRAD	What year they graduated from Undergraduate school	NUMBER(4,0)	0000-9999	Yes	No	No
BIRTHDATE	date of birth	DATE	Any	Yes	No	No
ETHNICITY	race/ethnicity	VARCHAR2(20)	All	Yes	No	No
STREET	street address	VARCHAR2(50)	All	No	No	No
CITY	city name	VARCHAR2(50)	All	No	No	No
ST_PROV	state or province name	VARCHAR2(50)	All	No	No	No
COUNTRY	country name	VARCHAR2(50)	All	Yes	No	No
ZIP	zip code	VARCHAR2(50)	All	Yes	No	No
PHONENUMBER	phone number of applicant	VARCHAR2(15)	All	Yes	No	No

Background: Stores information that changes more often than information in applicant table. Is filled out when applicants issue an order for a report.

Attribute Name	Description	Datatype	Domain	Nullable	PK	FK
BIQID	ID for BIQ	NUMBER(8,0)	00000000-99999999	No	Yes	No
INTENDEDMAJORFIELD	Intended Graduate Major Field	VARCHAR2(50)	All	Yes	No	No
GENDER	Gender	VARCHAR2(10)	All	No	No	No
CITIZENSHIP	Citizenship	VARCHAR2(50)	All	Yes	No	No

MOTHERED	Highest education level for the applicant's mother	VARCHAR2(20)	All	Yes	No	No
FATHERED	Highest education level for the applicant's father	VARCHAR2(20)	All	Yes	No	No
CURRENTSTAT	The current enrollment status of the applicant	VARCHAR2(15)	All	No	No	No
YEARSWORKEXP E	how many years worth of relevant work experience the applicant has	NUMBER(3,0)	000-999	No	No	No
APPLICANTID	ID for Applicant	NUMBER(8,0)	00000000-99999999	No	No	Yes

Evaluations: Contains evaluations which are made by raters about applicants

Attribute Name	Description	Datatype	Domain	Nullable	PK	FK
EVALUATIONID	ID for the Evaluation	NUMBER(8,0)	00000000-99999999	No	Yes	No
LENGTHKNOWN	How long the Rater has known the Applicant	VARCHAR2(15)	All	No	No	No
CAPACITYKNOWN	In what capacity the Rater knows the Applicant	VARCHAR2(15)	All	No	No	No

KNOWLEDGESCORE	Score from 1-10 on Applicant's knowledge skills	NUMBER(2,0)	1-10	No	No	No
KNOWLEDGECOMMENT	Rater comments on Applicant's knowledge skill	VARCHAR2(1000)	All	Yes	No	No
COMMUNICATIONSCORE	Score from 1-10 on Applicant's communication skills	NUMBER(2,0)	1-10	No	No	No
COMMUNICATIONCOMMENT	Rater comments on Applicant's communication skill	VARCHAR2(1000)	All	Yes	No	No
TEAMWORKSCORE	Score from 1-10 on Applicant's teamwork skills	NUMBER(2,0)	1-10	No	No	No
TEAMWORKCOMMENT	Rater comments on Applicant's teamwork skill	VARCHAR2(1000)	All	Yes	No	No
RESILIENCESCORE	Score from 1-10 on Applicant's resilience skills	NUMBER(2,0)	1-10	No	No	No
RESILIENCECOMMENT	Rater comments on Applicant's resilience skill	VARCHAR2(1000)	All	Yes	No	No
PLANNINGORGANIZATIONSCORE	Score from 1-10 on Applicant's planning & organization skills	NUMBER(2,0)	1-10	No	No	No
PLANNINGORGANIZATIONCOMMENT	Rater comments on Applicant's planning & organization skill	VARCHAR2(1000)	All	Yes	No	No
ETHICSSCORE	Score from 1-10 on Applicant's ethics skills	NUMBER(2,0)	1-10	No	No	No
ETHICSCOMMENT	Rater comments on Applicant's ethics skill	VARCHAR2(1000)	All	Yes	No	No

RATERSELF EVALUATION	A self evaluation of how strict or lenient the rater perceives themselves to be	NUMBER(10,0)	000000000 0-999999999 9	No	No	No
RATERID	ID for rater	NUMBER(8,0)	00000000-99999999	No	No	Yes
REPORTID	ID for report that this evaluation ends up on	NUMBER(8,0)	00000000-99999999	Yes	No	Yes

Invites: A record of what applicants invited what raters and the resultant evaluations

Attribute Name	Description	Datatype	Domain	Nullable	PK	FK
APPLICANTID	ID for applicant	NUMBER(8,0)	00000000-99999999	No	No	Yes
RATERID	ID for rater	NUMBER(8,0)	00000000-99999999	No	No	Yes
EVALUATIONID	ID for the evaluation that is associated with the applicant and rater	NUMBER(8,0)	00000000-99999999	No	No	Yes

Orders: Contains information about orders that are initiated by applicants for the purpose of sending reports

Attribute Name	Description	Datatype	Domain	Nullable	PK	FK
ORDERID	ID for order	NUMBER(8,0)	00000000-99999999	No	Yes	No
ORDERDATE	Date the order was initiated by the participant	DATE	SYSDATE	Yes	No	No
PAIDSTATUS	Whether or not the order was paid	VARCHAR2(1)	Y, N, P	No	No	No
FREECREDIT	Whether the applicant used one of the 4 free credits	VARCHAR2(1)	Y, N	No	No	No
PAYMENTID	ID for the payment	NUMBER(8,0)	00000000-99999999	Yes	No	Yes
REPORTID	ID for the report that was issued as a result of this order	NUMBER(8,0)	00000000-99999999	No	No	Yes

Payment: Contains payment information, may not be used if a free credit was used

Attribute Name	Description	Datatype	Domain	Nullable	PK	FK
PAYMENTID	ID of the payment	NUMBER(8,0)	00000000-99999999	No	Yes	No
METHODNAME	name of the method of payment	VARCHAR2(15)	All	No	No	No
PAYMENTNUMBER	number associated with the method of payment (e.g., credit/debit card number, paypal invoice, bank transfer number)	NUMBER(20,0)	000000000000 0000000000-9999999999 9999999999	No	No	No
PAYMENTAMOUNT	Amount to be paid	NUMBER(3,0)	000-999	No	No	No

Raters: Contains information about the raters, who are invited by the applicants to give evaluations

Attribute Name	Description	Datatype	Domain	Nullable	PK	FK
RATERID	ID of rater	NUMBER(8,0)	00000000-99999999	No	Yes	No
FIRSTNAME	first name of rater	VARCHAR2(20)	All	No	No	No
LASTNAME	last name of rater	VARCHAR2(20)	All	No	No	No
MIDDLENAME	middle name of rater	VARCHAR2(10)	All	Yes	No	No
STREET	Street address of rater	VARCHAR2(50)	All	No	No	No
CITY	City of rater	VARCHAR2(50)	All	No	No	No
ST_PROV	State or Province of rater	VARCHAR2(50)	All	No	No	No

COUNTRY	Country of rater	VARCHAR2(50)	All	Yes	No	No
ZIP	Zip Code of Rater	VARCHAR2(10)	All	Yes	No	No
DEPARTMENTNAME	Rater's Department name	VARCHAR2(50)	All	No	No	No
ORGANIZATIONNAME	Rater's Organization name	VARCHAR2(50)	All	No	No	No
RATERTITLE	Title of Rater	VARCHAR2(50)	All	No	No	No

Reports: Contains information about the report and what it's associated BIQ is

Attribute Name	Description	Datatype	Domain	Nullable	PK	FK
REPORTID	ID of Report	NUMBER(8,0)	00000000-99999999	No	Yes	No
DESIGNATEDINSTITUTION	Name of the Institution it is being sent to	VARCHAR2(50)	All	Yes	No	No
BIQID	ID of BIQ	NUMBER(8,0)	00000000-99999999	Yes	No	Yes

Sends: The relationship between orders and reports that includes the date when the report was sent

Attribute Name	Description	Datatype	Domain	Nullable	PK	FK
ORDERID	ID for the order	NUMBER(8,0)	00000000-99999999	No	No	Yes
REPORTID	ID of Report	NUMBER(8,0)	00000000-99999999	No	No	Yes
SENTDATE	the date that the report was sent	DATE	SYSDATE	Yes	No	No

6) DDL:

CREATE TABLE Applicant

(

applicantID NUMBER(8)

CONSTRAINT applicant_pk PRIMARY KEY,

emailAddress VARCHAR2(50)

CONSTRAINT applicant_nn_email NOT NULL,

pword VARCHAR2(16)

CONSTRAINT applicant_nn_password NOT NULL, -- renamed password to pword because password was protected word

```

firstName VARCHAR2(20)
    CONSTRAINT applicant_nn_firstname NOT NULL,
lastName VARCHAR2(20)
    CONSTRAINT applicant_nn_lastname NOT NULL,
middleName VARCHAR2(8), -- can be null because some people don't have middle names
socialSecurityNumber VARCHAR2(20)
    CONSTRAINT applicant_uq_ssn UNIQUE, -- must be unique
attendingInstitution VARCHAR2(50),
majorField VARCHAR2(50),
yearUndergrad NUMBER(4)
    CONSTRAINT applicant_ck_year CHECK(yearUndergrad > 1900),
birthdate DATE,
ethnicity VARCHAR2(20),
street VARCHAR2(50)
    CONSTRAINT applicant_nn_street NOT NULL,
city VARCHAR2(50)
    CONSTRAINT applicant_nn_city NOT NULL,
st_prov VARCHAR2(50)
    CONSTRAINT applicant_nn_state NOT NULL, -- state changed to st_prov
country VARCHAR2(50),
zip VARCHAR2(50),
phoneNumber VARCHAR2(15)
);

```

--Background

```
CREATE TABLE Background
```

```

(
    biqID NUMBER(8)
        CONSTRAINT background_pk PRIMARY KEY,
    intendedMajorField VARCHAR2(50),
    gender VARCHAR2(10)
        CONSTRAINT background_nn_gender NOT NULL,
    citizenship VARCHAR2(50),
    motherEd VARCHAR2(20), -- can be null, not everyone has a mother in their lives
    fatherEd VARCHAR2(20), -- can be null, not everyone has a father in their lives
    currentStat VARCHAR2(15)
        CONSTRAINT background_nn_currentStatus NOT NULL,
    yearsWorkExperience NUMBER(3)
        CONSTRAINT background_nn_yearsWorkExperience NOT NULL
        CONSTRAINT background_ck_yearsWorkExperience CHECK(yearsWorkExperience
BETWEEN 0 and 125),
    applicantID NUMBER(8)
        CONSTRAINT background_fk_applicantID REFERENCES Applicant(applicantID) ON
DELETE CASCADE
        CONSTRAINT background_nn_applicantID NOT NULL
);

```

--Raters

CREATE TABLE Raters

```
(
  raterID NUMBER(8)
    CONSTRAINT rater_pk PRIMARY KEY,
  firstName VARCHAR2(20)
    CONSTRAINT rater_nn_firstname NOT NULL,
  lastName VARCHAR2(20)
    CONSTRAINT rater_nn_lastname NOT NULL,
  middleName VARCHAR2(10), -- can be null because some people don't have middle names
  street VARCHAR2(50)
    CONSTRAINT rater_nn_street NOT NULL,
  city VARCHAR2(50)
    CONSTRAINT rater_nn_city NOT NULL,
  st_prov VARCHAR2(50)
    CONSTRAINT rater_nn_state NOT NULL, -- state changed to st_prov
  country VARCHAR2(50),
  zip VARCHAR2(10),
  departmentName VARCHAR2(50)
    CONSTRAINT rater_nn_department NOT NULL,
  organizationName VARCHAR2(50)
    CONSTRAINT rater_nn_organization NOT NULL,
  raterTitle VARCHAR2(50)
    CONSTRAINT rater_nn_title NOT NULL
);
```

--Reports

CREATE TABLE Reports

```
(
  reportID NUMBER(8)
    CONSTRAINT reports_pk PRIMARY KEY,
  designatedInstitution VARCHAR2(50),
  biqID NUMBER(8)
    CONSTRAINT reports_fk_biq REFERENCES Background(biqID) ON DELETE SET
  NULL
);
```

--Evaluations

CREATE TABLE Evaluations

```
(
  evaluationID NUMBER(8)
    CONSTRAINT evaluations_pk PRIMARY KEY,
  lengthKnown VARCHAR2(15)
    CONSTRAINT evaluations_nn_lengthknown NOT NULL,
```

```

capacityKnown VARCHAR2(15)
    CONSTRAINT evaluations_nn_capacityknown NOT NULL,
knowledgeScore NUMBER(2)
    CONSTRAINT evaluations_nn_knowledgescore NOT NULL
    CONSTRAINT evaluations_ck_knowledgescore CHECK(knowledgeScore BETWEEN 1
AND 10),
knowledgeComment VARCHAR2(1000),
communicationScore NUMBER(2)
    CONSTRAINT evaluations_nn_communicationscore NOT NULL
    CONSTRAINT evaluations_ck_communicationscore CHECK(communicationScore
BETWEEN 1 AND 10),
communicationComment VARCHAR2(1000),
teamworkScore NUMBER(2)
    CONSTRAINT evaluations_nn_teamworkscore NOT NULL
    CONSTRAINT evaluations_ck_teamworkscore CHECK(teamworkScore BETWEEN 1
AND 10),
teamworkComment VARCHAR2(1000),
resilienceScore NUMBER(2)
    CONSTRAINT evaluations_nn_resiliencescore NOT NULL
    CONSTRAINT evaluations_ck_resiliencescore CHECK(resilienceScore BETWEEN 1
AND 10),
resilienceComment VARCHAR2(1000),
planningOrganizationScore NUMBER(2)
    CONSTRAINT evaluations_nn_planningorganizationscore NOT NULL
    CONSTRAINT evaluations_ck_planningorganizationscore
CHECK(planningOrganizationScore BETWEEN 1 AND 10),
planningOrganizationComment VARCHAR2(1000),
ethicsScore NUMBER(2)
    CONSTRAINT evaluations_nn_ethicsscore NOT NULL
    CONSTRAINT evaluations_ck_ethicsscore CHECK(ethicsScore BETWEEN 1 AND 10),
ethicsComment VARCHAR2(1000),
raterSelfEvaluation NUMBER(10)
    CONSTRAINT evaluations_nn_selfeval NOT NULL,
    CONSTRAINT evaluations_ck_selfeval CHECK(raterSelfEvaluation BETWEEN 1 AND
10),
raterID NUMBER(8)
    CONSTRAINT evaluations_fk_raterID REFERENCES Raters(raterID)
    CONSTRAINT evaluations_nn_raterID NOT NULL,
reportID NUMBER(8)
    CONSTRAINT evaluations_fk_reportID REFERENCES Reports(reportID)
);

```

```

--Invites
CREATE TABLE Invites
(
    applicantID NUMBER(8)

```

```

        CONSTRAINT invites_fk_applicantID REFERENCES Applicant(applicantID) ON
DELETE SET NULL,
        raterID NUMBER(8)
        CONSTRAINT invites_fk_raterID REFERENCES Raters(raterID) ON DELETE SET
NULL,
        evaluationID NUMBER(8)
        CONSTRAINT invites_fk_evaluationID REFERENCES Evaluations(evaluationID) ON
DELETE SET NULL
);

```

--Payment

```
CREATE TABLE Payment
```

```

(
    paymentID NUMBER(8)
        CONSTRAINT payment_pk PRIMARY KEY,
    methodName VARCHAR2(15)
        CONSTRAINT payment_nn_methodname NOT NULL,
    paymentNumber NUMBER(20)
        CONSTRAINT payment_nn_paymentNumber NOT NULL,
    paymentAmount NUMBER(3)
        CONSTRAINT payment_nn_paymentamount NOT NULL
);

```

--Orders

```
CREATE TABLE Orders
```

```

(
    orderID NUMBER(8)
        CONSTRAINT order_pk PRIMARY KEY,
    orderDate DATE DEFAULT SYSDATE,
    paidStatus VARCHAR2(1)
        CONSTRAINT orders_nn_paid NOT NULL
        CONSTRAINT orders_ck_paid CHECK(paidStatus IN ('Y','N','P')), -- yes, no, and pending
    freeCredit VARCHAR2(1)
        CONSTRAINT orders_nn_free NOT NULL
        CONSTRAINT orders_ck_free CHECK(freeCredit IN ('Y','N')), -- yes, no
    paymentID NUMBER(8)
        CONSTRAINT orders_fk_paymentID REFERENCES Payment(paymentID),
    reportID NUMBER(8)
        CONSTRAINT orders_fk_reportID REFERENCES Reports(reportID)
        CONSTRAINT orders_nn_reportID NOT NULL
);

```

--Sends

```
CREATE TABLE Sends
```

```
(
```

```

orderID NUMBER(8)
    CONSTRAINT sends_fk_orderid REFERENCES Orders(orderID)
    CONSTRAINT sends_nn_orderid NOT NULL,
reportID NUMBER(8)
    CONSTRAINT sends_fk_reportid REFERENCES Reports(reportID)
    CONSTRAINT sends_nn_reportid NOT NULL,
sentDate DATE DEFAULT SYSDATE
);

```

7) DML:

```

--Applicant
INSERT INTO Applicant(APPLICANTID, EMAILADDRESS,PWORD, FIRSTNAME,
LASTNAME,
    SOCIALSECURITYNUMBER, ATTENDINGINSTITUTION, MAJORFIELD,
YEARUNDERGRAD, BIRTHDATE,
    ETHNICITY, STREET, CITY, ST_PROV, COUNTRY, ZIP, PHONENUMBER)
VALUES('10000001', 'doe@john.net', 'p@ssword!', 'john', 'doe', '8888888888','Butler
University','Cell/Cellular Biology','2006',
    TO_DATE('1987/10/01', 'yyyy/mm/dd'),'White', '123 Memory Lane', 'Carmel', 'IN', 'USA',
'146032', '12341888');
INSERT INTO Applicant(APPLICANTID, EMAILADDRESS,PWORD, FIRSTNAME,
LASTNAME, MIDDLENAME,
    SOCIALSECURITYNUMBER, ATTENDINGINSTITUTION, MAJORFIELD,
YEARUNDERGRAD, BIRTHDATE,
    ETHNICITY, STREET, CITY, ST_PROV, COUNTRY, ZIP, PHONENUMBER)
VALUES('10000002', 'amelialovescats@domain.co.uk', 'catscatscats!', 'Amelia', 'Monroe',
'Claire', '929922','Kings College London',
'Data Processing','2011', TO_DATE('1999/12/31', 'yyyy/mm/dd'),'Hispanic', 'The Hallows',
'Badgers Drift',
'Midsomer', 'UK', '3456', '442343488');
INSERT INTO Applicant(APPLICANTID, EMAILADDRESS,PWORD, FIRSTNAME,
LASTNAME, MIDDLENAME,
    SOCIALSECURITYNUMBER, ATTENDINGINSTITUTION, MAJORFIELD,
YEARUNDERGRAD, BIRTHDATE,
    ETHNICITY, STREET, CITY, ST_PROV, COUNTRY, ZIP, PHONENUMBER)
VALUES('10000003', 'gangnamstyle@korea.com', 'knock42!', 'MinWoo', 'Ma', '', '123412123',
'Seoul National University',
'Parks and Recreation Management','2019', TO_DATE('1995/09/01', 'yyyy/mm/dd'),'Asian',
'Sajik-ro-3-gil 23', 'Seoul', 'Jongno-gu', 'Korea, Republic of', '', '8399320322');
INSERT INTO Applicant(APPLICANTID, EMAILADDRESS,PWORD, FIRSTNAME,
LASTNAME, MIDDLENAME,
    SOCIALSECURITYNUMBER, ATTENDINGINSTITUTION, MAJORFIELD,
YEARUNDERGRAD, BIRTHDATE,
    ETHNICITY, STREET, CITY, ST_PROV, COUNTRY, ZIP, PHONENUMBER)

```

```
VALUES('10000004', 'fakenews@tt.co.cn', 'oranges!', 'Don', 'Trumps', 'Walter', '000000000',
'Rutgers University',
'Unethical Business', '1984', TO_DATE('1955/01/31', 'yyyy/mm/dd'), 'White',
'White House', 'Washington DC', 'Washington DC', 'USA', '222222', '12224444');
```

--Background

```
INSERT INTO Background( biquid, intendedmajorfield, gender, citizenship, mothered,
    fathered, currentstat, yearsworkexperience, applicantid)
VALUES('111', 'Pharmacology', 'male', 'USA', 'Some College', 'Masters Degree', 'Graduated',
'10', '10000001');
INSERT INTO Background( biquid, intendedmajorfield, gender, citizenship, mothered,
    fathered, currentstat, yearsworkexperience, applicantid)
VALUES('112', 'Cell Biology', 'trans', 'UK', 'Professional Degree', 'Professional Degree',
'Senior', '0', '10000002');
INSERT INTO Background( biquid, intendedmajorfield, gender, citizenship, mothered,
    fathered, currentstat, yearsworkexperience, applicantid)
VALUES('113', 'Geological Sciences', 'male', 'Korea, Republic of', 'Bachelors Degree',
'Highschool', 'Graduated', '1', '10000003');
INSERT INTO Background( biquid, intendedmajorfield, gender, citizenship, mothered,
    fathered, currentstat, yearsworkexperience, applicantid)
VALUES('114', 'Geology', 'male', 'Korea, Republic of', 'Bachelors Degree', 'Some College',
'Graduated', '2', '10000003');
INSERT INTO Background( biquid, intendedmajorfield, gender, citizenship, mothered,
    fathered, currentstat, yearsworkexperience, applicantid)
VALUES('193', 'Presidency', 'male', 'USA', 'Less than Highschool', 'Highschool', 'Graduated',
'40', '10000004');
commit;
```

--Raters

```
INSERT INTO Raters( raterid, firstname, lastname, middlename, street, city, st_prov,
    country, zip, departmentname, organizationname, ratertitle)
VALUES('12344', 'Sarah', 'Smith', 'Shannon', '173 Washington St', 'Bristol', 'PA', 'USA',
'19007',
'Academic to Career Research', 'Educational Testing Service', 'Miss');
INSERT INTO Raters( raterid, firstname, lastname, middlename, street, city, st_prov,
    country, zip, departmentname, organizationname, ratertitle)
VALUES('121111', 'Feargal', 'Javert', 'Jean', '122 Hippopotami Way', 'Bristol', 'England',
'UK', '',
'Computer Science', 'University of Bristol', 'Dr');
INSERT INTO Raters( raterid, firstname, lastname, middlename, street, city, st_prov,
    country, zip, departmentname, organizationname, ratertitle)
VALUES('121122', 'Kyle', 'Purcell', 'Joyce', '607 Fawn St.', 'Liverpool', 'England', 'UK', '',
'Computer Science', 'University of Liverpool', 'Dr');
INSERT INTO Raters( raterid, firstname, lastname, middlename, street, city, st_prov,
    country, zip, departmentname, organizationname, ratertitle)
```

```

VALUES('12223', 'In-Soon', 'Kim', '', '271-5, Junggog 4(sa)-dong', 'Gwangjin-gu', 'Seoul',
'Korea, Republic of', '',
'Seoul Branch', 'National Park Service', 'Mrs');
INSERT INTO Raters( raterid, firstname, lastname,middlename, street, city, st_prov,
country, zip, departmentname, organizationname, ratertitle)
VALUES('1123', 'Jun-Ho', 'Ya', '', '276-6, Kkachiapateu, Namsan 4(sa)-dong', 'Jung-gu',
'Daegu', 'Korea, Republic of', '',
'Daegu Branch', 'National Park Service', 'Mrs');
INSERT INTO Raters( raterid, firstname, lastname,middlename, street, city, st_prov,
country, zip, departmentname, organizationname, ratertitle)
VALUES('1883', 'Kwang', 'Si', 'Seon', '336-2, Ahyeon-dong', 'Mapo-gu', 'Seoul', 'Korea,
Republic of', '',
'Limb Removal', 'Si Tree Service', 'Mr');
INSERT INTO Raters( raterid, firstname, lastname,middlename, street, city, st_prov,
country, zip, departmentname, organizationname, ratertitle)
VALUES('13454', 'Adeline', 'Gunn', 'Joni', '59 Constitution Court', 'Lindenhurst', 'NY', 'USA',
'11757',
'Client Relations', 'Department of Corrections', 'Miss');
INSERT INTO Raters( raterid, firstname, lastname,middlename, street, city, st_prov,
country, zip, departmentname, organizationname, ratertitle)
VALUES('123564', 'Manuel', 'Beltran', 'Idris', '767 S. Fawn Circle', 'Liverpool', 'NY', 'USA',
'13090',
'Inmate Management', 'Federal Prisons', 'Miss');

```

--Reports

```

INSERT INTO Reports(reportid, designatedinstitution, biquid)
values('234','Purdue University','111');
INSERT INTO Reports(reportid, designatedinstitution, biquid)
values('235','University of Florida','112');
INSERT INTO Reports(reportid, designatedinstitution, biquid)
values('887','National University of Singapore','113');
INSERT INTO Reports(reportid, designatedinstitution, biquid)
values('888','National University of Singapore','114');
INSERT INTO Reports(reportid, designatedinstitution, biquid)
values('8900','American University','193');
commit;

```

--Evaluations

```

INSERT INTO EVALUATIONS( evaluationid, lengthknown, capacityknown, knowledgescore,
knowledgecomment, communicationscore,
communicationcomment, teamworkscore, teamworkcomment, resiliencescore,
resiliencecomment, planningorganizationscore,
planningorganizationcomment, ethicsscore, ethicscomment, raterselfevaluation, raterid,
reportid)

```


VALUES('345', '4 years', 'Coworker', '10', 'If John does not know something, he always knows where to look for it', '9',

'John is a gifted communicator and always brings clarity to projects when there is any point of confusion', '8',

'John is a delight to work with, but can be a bit assertive', '10', 'John never gives up, he is like a dog with a bone who

also has lockjaw', '5', 'While he is not an absolute disaster when it comes to organizing, I also cannot say he is particularly

gifted in this area', '10', 'I have never known John to do anything less than by the book', '10', '12344', '234');

INSERT INTO EVALUATIONS(evaluationid, lengthknown, capacityknown, knowledgescore, knowledgedecomment, communicationscore,

communicationcomment, teamworkscore, teamworkcomment, resiliencescore, resiliencecomment, planningorganizationscore,

planningorganizationcomment, ethicsscore, ethicscomment, raterselfevaluation, raterid, reportid)

VALUES('397', '2 years', 'Professor', '8', 'While not a shining star in the classroom, I have never doubted their work', '6',

'They are not the best communicator, and sometimes struggle when it comes to things to say; however, their written communication

skills make up for it', '10', 'They are a great boon to any team they are part of, they work great with others and keep the team on track',

'3', 'When they encounter problems, they often give up rather than working through the problem. They often need coaxing to get past a small hurdle',

'10', 'They are very organized and often plan ahead, I have met few people as organized as them', '8',

'I do not believe they have ever turned in any work that was not their own, but one never knows', '6', '121111', '235');

INSERT INTO EVALUATIONS(evaluationid, lengthknown, capacityknown, knowledgescore, knowledgedecomment, communicationscore,

communicationcomment, teamworkscore, teamworkcomment, resiliencescore, resiliencecomment, planningorganizationscore,

planningorganizationcomment, ethicsscore, ethicscomment, raterselfevaluation, raterid, reportid)

VALUES('398', '4 years', 'Professor', '8', 'They get good grades and their turned in work is quality that I have come to expect from them',

'5', 'Cannot evaluate', '5', 'Cannot evaluate', '3', 'Absolutely no grit', '9', 'Fairly well organized',

'8', 'Never caught them cheating', '6', '121122', '235');

INSERT INTO EVALUATIONS(evaluationid, lengthknown, capacityknown, knowledgescore, knowledgedecomment, communicationscore,

communicationcomment, teamworkscore, teamworkcomment, resiliencescore, resiliencecomment, planningorganizationscore,

planningorganizationcomment, ethicsscore, ethicscomment, raterselfevaluation, raterid, reportid)

VALUES('399', '0 Years', 'None', '1', 'I do not even know this person',

'1', 'Cannot evaluate', '1', 'Cannot evaluate', '1', ' ', '1', ' ',

```

'1', '', '1', '121122', '8900');
INSERT INTO EVALUATIONS( evaluationid, lengthknown, capacityknown, knowledgescore,
knowledgecomment, communicationscore,
communicationcomment, teamworkscore, teamworkcomment, resiliencescore,
resiliencecomment, planningorganizationscore,
planningorganizationcomment, ethicsscore, ethicscomment, raterselfevaluation, raterid,
reportid)
VALUES('123', '1 year', 'Intern Mentor', '9', 'Seems to know his work well', '10',
'Very polite and good to work with', '10', 'Excellent team player, always willing to do any
task', '10',
'', '10', 'He organized our messy office for us, we were very blessed to have him', '10',
'Never had a complaint about his ethics', '10', '1123', '887');
INSERT INTO EVALUATIONS( evaluationid, lengthknown, capacityknown, knowledgescore,
knowledgecomment, communicationscore,
communicationcomment, teamworkscore, teamworkcomment, resiliencescore,
resiliencecomment, planningorganizationscore,
planningorganizationcomment, ethicsscore, ethicscomment, raterselfevaluation, raterid,
reportid)
VALUES('124', '4 year', 'Employer', '10', 'Works hard for us every summer, knows his way
around trees', '10',
'', '10', '', '10', '', '10', 'Very good at organizing', '10', '', '1', '1883', '887');
INSERT INTO EVALUATIONS( evaluationid, lengthknown, capacityknown, knowledgescore,
knowledgecomment, communicationscore,
communicationcomment, teamworkscore, teamworkcomment, resiliencescore,
resiliencecomment, planningorganizationscore,
planningorganizationcomment, ethicsscore, ethicscomment, raterselfevaluation, raterid,
reportid)
VALUES('125', '1 year', 'Intern Mentor', '10', 'MinWoo is very knowledgable about how to
manage the park service', '8',
'MinWoo was always able to get his point across and was polite and respectful in talking to
superiors', '10',
'MinWoo is a hardworking teammate and was always willing to take on new tasks', '5',
'I cannot speak to this attribute, he worked fine on his internship', '8',
'He kept to the office organization scheme and his desk was never messy', '10',
'MinWoo is very ethical', '10', '12223', '888');
INSERT INTO EVALUATIONS( evaluationid, lengthknown, capacityknown, knowledgescore,
knowledgecomment, communicationscore,
communicationcomment, teamworkscore, teamworkcomment, resiliencescore,
resiliencecomment, planningorganizationscore,
planningorganizationcomment, ethicsscore, ethicscomment, raterselfevaluation,
raterid,reportid)
VALUES('444', '6 year', 'Mentor', '5', 'Don seems like he knows some things', '4',
'Speech was often repetitive and confusing in front of the court', '3',
'Delegates and does not take responsibility', '8', 'He is very dogged', '5', 'No clue', '2',
'A known criminal', '10', '13454', '8900');

```

```

INSERT INTO EVALUATIONS( evaluationid, lengthknown, capacityknown, knowledgescore,
knowledgecomment, communicationscore,
communicationcomment, teamworkscore, teamworkcomment, resiliencescore,
resiliencescomment, planningorganizationscore,
planningorganizationcomment, ethicsscore, ethicscomment, raterselfevaluation, raterid,
reportID)
VALUES('445', '6 year', 'Mentor', '8', 'Very knowledgeable about the ins and outs of prison life',
'4',
'Seems persuasive but his logic falls apart at the slightest hint of reason', '10',
'Got along well with fellow inmates', '5', ' ', '8', 'His cell was not messy', '5',
'No idea', '10', '123564', '8900');

```

--Payment

```

INSERT INTO Payment(paymentID, methodname, paymentnumber, paymentamount)
VALUES('1412', 'Paypal', '1232345234', '20');
INSERT INTO Payment(paymentID, methodname, paymentnumber, paymentamount)
VALUES('1337', 'Visa', '444444444444', '20');
INSERT INTO Payment(paymentID, methodname, paymentnumber, paymentamount)
VALUES('42', 'BankTransfer', '2345423234', '20');
INSERT INTO Payment(paymentID, methodname, paymentnumber, paymentamount)
VALUES('455', 'Credit', '00000000000', '20');
INSERT INTO Payment(paymentID, methodname, paymentnumber, paymentamount)
VALUES('459', 'Visa', '4433334565543', '20');

```

--Orders

```

INSERT INTO Orders(orderid, paidstatus, freecredit, paymentid, reportid)
VALUES('44', 'Y', 'N', '1412', '234');
INSERT INTO Orders(orderid, paidstatus, freecredit, paymentid, reportid)
VALUES('41', 'N', 'N', '1337', '235');
INSERT INTO Orders(orderid, paidstatus, freecredit, paymentid, reportid)
VALUES('49', 'P', 'N', '42', '887');
INSERT INTO Orders(orderid, paidstatus, freecredit, paymentid, reportid)
VALUES('50', 'Y', 'Y', '455', '888');
INSERT INTO Orders(orderid, paidstatus, freecredit, paymentid, reportid)
VALUES('66', 'N', 'N', '459', '8900');

```

--INVITES

```

INSERT INTO Invites(applicantid, raterid, evaluationid)
VALUES('10000001', '12344', '345');
INSERT INTO Invites(applicantid, raterid, evaluationid)
VALUES('10000002', '121111', '397');
INSERT INTO Invites(applicantid, raterid, evaluationid)
VALUES('10000003', '12223', '125');
INSERT INTO Invites(applicantid, raterid, evaluationid)
VALUES('10000004', '121122', '398');
INSERT INTO Invites(applicantid, raterid, evaluationid)

```

```
VALUES('10000003','121122','399');
INSERT INTO Invites(applicantid, raterid, evaluationid)
VALUES('10000003','1883','124');
INSERT INTO Invites(applicantid, raterid, evaluationid)
VALUES('10000003','1123','123');
INSERT INTO Invites(applicantid, raterid, evaluationid)
VALUES('10000004','13454','444');
INSERT INTO Invites(applicantid, raterid, evaluationid)
VALUES('10000004','123564','445');
```

```
--SENDS
INSERT INTO Sends(orderid, reportid)
VALUES('44', '234');
INSERT INTO Sends(orderid, reportid)
VALUES('41', '235');
INSERT INTO Sends(orderid, reportid)
VALUES('49', '887');
INSERT INTO Sends(orderid, reportid)
VALUES('50', '888');
INSERT INTO Sends(orderid, reportid)
VALUES('66', '8900');
commit;
```

8) Queries:

1. The first query is to show what a standardized letter of recommendation report might look like to the designated universities.

```
alter table applicant modify pword INVISIBLE;
alter table applicant modify socialsecuritynumber INVISIBLE;
SELECT *
FROM applicant p JOIN
(background b JOIN
(reports r JOIN
(evaluations e JOIN raters a
ON a.raterid = e.raterid)
ON r.reportID = e.reportID)
ON r.biqID=b.biqid)
ON p.applicantID = b.applicantID;
```

Too large to screencap...

	APPLICANTID	EMAILADDRESS	FIRSTNAME	LASTNAME	MIDDLENAME	ATTENDINGINSTITUTION
1	10000001	doe@john.net	john	doe	(null)	Butler University
2	10000002	amelialovescats@domain.co.uk	Amelia	Monroe	Claire	Kings College London
3	10000002	amelialovescats@domain.co.uk	Amelia	Monroe	Claire	Kings College London
4	10000004	fakenews@tt.co.cn	Don	Trumps	Walter	Rutgers University
5	10000003	gangnamstyle@korea.com	MinWoo	Ma	(null)	Seoul National University
6	10000003	gangnamstyle@korea.com	MinWoo	Ma	(null)	Seoul National University
7	10000003	gangnamstyle@korea.com	MinWoo	Ma	(null)	Seoul National University
8	10000004	fakenews@tt.co.cn	Don	Trumps	Walter	Rutgers University
9	10000004	fakenews@tt.co.cn	Don	Trumps	Walter	Rutgers University

2. Are there payment methods that often result in unpaid orders?

```

SELECT orderid, Paidstatus, methodname
FROM orders o , payment p
WHERE paidstatus = 'N'
AND p.paymentid=o.paymentid;

```

	ORDERID	PAIDSTATUS	METHODNAME
1	41	N	Visa
2	66	N	Visa

Never trust credit...

3. What are the types of relationships between raters and those being rated?

```

SELECT capacityknown, count(capacityknown)
FROM evaluations
GROUP BY capacityknown
ORDER BY capacityknown ASC;

```

	CAPACITYKNOWN	COUNT(CAPACITYKNOWN)
1	Coworker	1
2	Employer	1
3	Intern Mentor	2
4	Mentor	2
5	None	1
6	Professor	2

4. Compute an overall score (average of the 6 scores) and display it by applicant.

```

SELECT (AVG(knowledgescore)+ AVG(communicationscore)+
AVG(teamworkscore) + AVG(resiliencescore) +
AVG(planningorganizationscore) + AVG(ethicsscore))/6
AS overallscore, applicantid
FROM evaluations e, invites i
WHERE e.evaluationid = i.evaluationid
GROUP BY applicantid;

```


8. And, finally, the ultimate goodbye:

```
drop table applicant cascade constraints purge;  
drop table background cascade constraints purge;  
drop table evaluations cascade constraints purge;  
drop table invites cascade constraints purge;  
drop table orders cascade constraints purge;  
drop table payment cascade constraints purge;  
drop table raters cascade constraints purge;  
drop table reports cascade constraints purge;  
drop table sends cascade constraints purge;
```

```
Table APPLICANT dropped.
```

```
Table BACKGROUND dropped.
```

```
Table EVALUATIONS dropped.
```

```
Table INVITES dropped.
```

```
Table ORDERS dropped.
```

```
Table PAYMENT dropped.
```

```
Table RATERS dropped.
```

```
Table REPORTS dropped.
```

```
Table SENDS dropped.
```