

CPSC 304 Project Cover Page

Milestone #: 0

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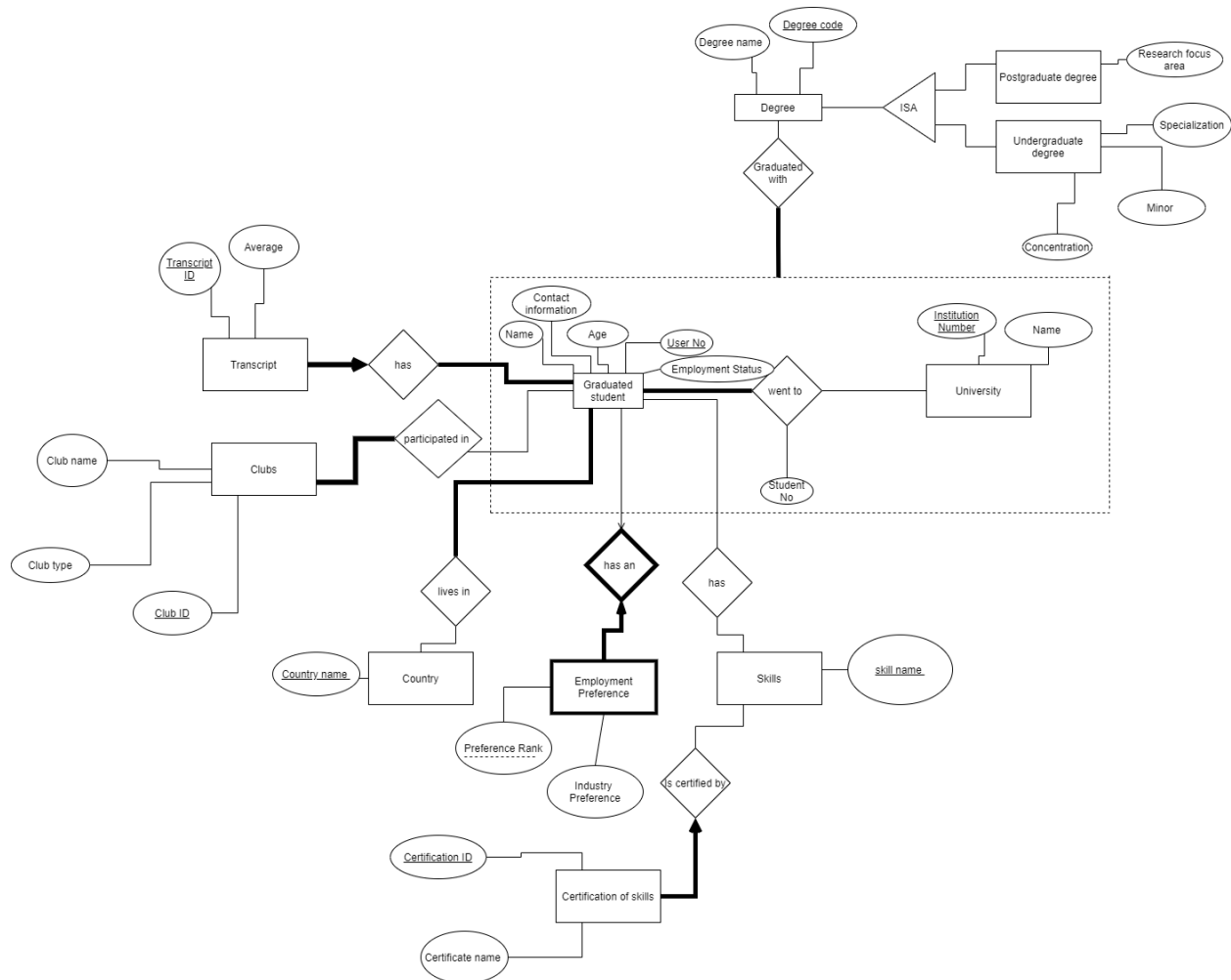
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By typing our names and student numbers in the above table, we certify that the work in the attached assignment was performed solely by those whose names and student IDs are included above. (In the case of Project Milestone 0, the main purpose of this page is for you to let us know your e-mail address, and then let us assign you to a TA for your project supervisor.)

In addition, we indicate that we are fully aware of the rules and consequences of plagiarism, as set forth by the Department of Computer Science and the University of British Columbia

ER Diagram



We made employment status as an attribute as suggested by the TA

We also added a weak entity called employment preferences that allows the user to give more information about their preferences to the Employer

Relational Schema

Graduated Student(User No: string, Name: string, Age: integer, Contact Information: string, Employed?: boolean)

Transcript(Transcript ID: string, **User No**: string, Average: integer)

Clubs(Club ID: string, Club Name: string, Club Type: string)

ParticipatedIn(**Club ID**: string, **User No**: string)

Country(Country Name: string)

LivesIn(**Country Name**: string, **User No**: string)

CertificationofSkills (Certification ID: string, **Skill Name**: string, Certificate Name: string)

Skills(Skill Name: string, Skill ID: string)

HasGraduatedStudentSkills(**Skill name**: string, **User No**: string)

Employment Preference(**User No**: string, Preference Rank: integer, Industry Preference: string)

University(Institution Number: integer, Name: string)

WentTo(**User No**: integer, **Institution No**: integer, Student No: integer)

Degree(Degree code: string, Degree Name: string)

GraduatedWith(**User No**: string, **Institution No**: string, **Degree code**: string)

Postgraduate degree(**Degree code**: string, Research focus area: string)

Undergraduate degree(**Degree code**: string, Specialization: string, Concentration: string, Minor: string)

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Functional Dependencies

Skill Id -> { Skill name }

{Club name, Club type} -> {Club ID, Club type}

Normalization

In the certification of skills table, we have skill ID, which allows us to recognise the skill name . However, we are not able to functionally determine certificate Id or certificate name from this.

Therefore it is not in BCNF and has to be decomposed. We will remove skill name from the certification of skills table. Therefore this table is in BCNF and we have the skill ID referenced to by the foreign key Skill ID.

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GraduatedWith(User No: string, **Institution No**: string, Degree code: string)

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Postgraduate degree(**Degree code:** string, Research focus area: string)

Undergraduate degree(**Degree code:** string, Specialization: string, Concentration: string, Minor: string)

SQL DDL

CREATE TABLE GraduatedStudent (

User No	Char(10) PRIMARY KEY,
Name	Char(20),
Age	Integer
Employment Status	Boolean
Contact Information	Char (20));

CREATE TABLE TranscriptID (

Transcript ID	Char(10) PRIMARY KEY,
Average	Integer

FOREIGN KEY (User No) REFERENCES Graduated Student);

CREATE TABLE Clubs (

Club ID	Char(10) PRIMARY KEY,
Club Name	Char(20),
Club Type	Char (20));

CREATE TABLE ParticipatedIn (

PRIMARY KEY (Club ID, User No)
FOREIGN KEY (Club ID) REFERENCES Clubs
FOREIGN KEY (User No) REFERENCES Graduated Student);

CREATE TABLE Country (

Country Name	Char(20) PRIMARY KEY);
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CREATE TABLE LivesIn (

PRIMARY KEY (Country Name, User No)

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FOREIGN KEY (Country Name) REFERENCES Country

FOREIGN KEY (User No) REFERENCES Graduated Student);

CREATE TABLE CertificationofSkills (

Certification ID Char(20) PRIMARY KEY,

Certificate Name Char(20)

FOREIGN KEY (Skill Name) REFERENCES Skills);

CREATE TABLE Skills(

Skill Name Char(20) PRIMARY KEY);

CREATE TABLE HasGraduatedStudentSkills(

PRIMARY KEY (Skill name, User No)

FOREIGN KEY (Skill name) REFERENCES Skills

FOREIGN KEY (User No) REFERENCES Graduated Student);

CREATE TABLE Employment Preference(

Preference Rank Integer

Industry Preference Char(20)

PRIMARY KEY (User No, Preference Rank)

FOREIGN KEY (User No) REFERENCES Graduated Student);

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CREATE TABLE University(

Institution Number Char (20) PRIMARY KEY,

Name Char (20));

CREATE TABLE WentTo (

Student No CHAR (10)

PRIMARY KEY (User No, Institution No)

FOREIGN KEY (User No) REFERENCES Graduated Student

FOREIGN KEY (Institution No) REFERENCES University);

CREATE TABLE Degree(

Degree code CHAR(10) PRIMARY KEY,

Degree Name CHAR(20))

CREATE TABLE GraduatedWith(

PRIMARY KEY (User No, Institution No, Degree code)

FOREIGN KEY (User No) REFERENCES Graduated Student

FOREIGN KEY (Institution No) REFERENCES University

FOREIGN KEY (Degree Code) REFERENCES Degree);

CREATE TABLE Postgraduate degree(

Research focus area CHAR (20)

PRIMARY KEY (Degree Code)

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FOREIGN KEY (Degree code) REFERENCES Degree);

CREATE TABLE Undergraduate degree(

Specialization CHAR (20)

Concentration CHAR (20)

Minor CHAR (20)

PRIMARY KEY (Degree Code)

FOREIGN KEY (Degree code) REFERENCES Degree);

Queries

Insertion:

Adding a student to Graduated Students table

```
INSERT INTO Graduated Student(User no, Name, Age, Employment Status, Contact Information) VALUES ('0000000001', 'Rich Hampton', 22, 'false', '8976543210');
```

Selection:

Select and list all graduated students ordered by age.

```
SELECT * FROM Graduated Student ORDER BY Age;
```

Select and list the no. of different countries students in the table belong to

```
SELECT COUNT(DISTINCT Country Name) FROM Country;
```

Select and list the names of unemployed graduate students younger than 25

```
SELECT Name FROM Graduated Student WHERE Age < 25 AND Employment Status = 'false';
```

UPDATION:

Update and set Employment Status of the student whose User no. is 001, as employed.

```
UPDATE Graduated Student  
SET Employment Status = 'true'  
WHERE User no = '0000000001';
```

Deletion:

Delete student from Graduated Student whose User no. is 001.

```
DELETE FROM Graduated Student WHERE User no = "0000000001";
```


Graduated Student

User No	Name	Age	Contact Information
1	John Booker	22	2368685678
2	Kevin slater	22	2368685678
3	Micheal vaughan	22	2368685678
4	Niall Horan	22	Niall@gmail.com
5	Kevin durant	22	kevin@yahoo.co.in

Transcript

Transcript ID	User No	Average
ubc1	1	86
ubc2	2	87
sfu1	3	53
sfu2	4	99
fu2	5	76

Clubs

Club ID	Club name	Club type
ams1	junoon	dance
ams 3	cvc	community
sed3	acapella	singing
sed3	acapella	singing
sed3	acapella	singing

Participated in

Club ID	User No
ams1	1
ams 3	2
sed3	3
sed3	4
sed3	5

Country

Country Name
India
Italy
Russia
Canada
USA

Lives in

Country name	User No
India	1

Italy	2
Russia	3
Canada	4
USA	5

Skills

Skill Name	Skill ID
Java	ju
Python	py
Excel	ex
Word	wd
SQL	sq

Certification of skills

Certificate ID	Skill name	Certificate name
J1	Java	Java-level1
P2u	Python	Python- ucertification
E2	Excel	Excel-uni
WM	Word	Word-master-CourseEra
SQL-udemy	SQL	Udemy-Sql-PROFICIENCY

HasGraduatedStudentSkills

Skill name	User No
Java	1
Python	2
Excel	3
Word	4
SQL	5

Employment preference

User No	Preference Rank	Industry Preference
1	1	1 Automobile
2	1	1 Electronics
3	2	2 Software
4	3	3 Aviation
5	1	1 Publishing

University

Institution number	Name
O19330231062	UBC
O18781994282	SFU
OT1	UTO
MS3	Georgia West
AW3390II	Polyventic univeristy

Went to

User No	Institution No
1	O19330231062
2	O19330231062
3	O18781994282
4	O18781994282
5	AW3390II

Degree

Degree Code	Degree Name
BASC	bachelor applied science
BCOM	Bachelor commerce
BSC	Bachelor science
MS	Master in science
MA	Masters in arts

Graduatedwith

User NO	Institution no	Degree code
7	O19330231062	BASC
8	O19330231062	BCOM
9	O18781994282	BSC
10	O18781994282	MS
11	AW3390II	MA

Postgraduate degree

Degree code	Research focus area
MS	microorganisms
MBA	OPLOG
MD	cardioventricular applications
MR	thoracic explorations
MA	indian history

Undergraduate Degree

Degree code	Specialization	Concentration
BASC	materials	NULL
BNC	geographic resource	NULL
BD	cricket	Fielding
BG	architectural design	NULL
BH	hospitality	resource management

Employed?

True

True

FALSE

FALSE

FALSE