

QUEENSLAND UNIVERSITY OF TECHNOLOGY



School of Information Systems
Faculty of Science and Engineering

IFN554 Databases

Assessment 1

Semester 1 - 2019

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Task 1

RQUT, a research center, maintains information about researchers and research projects. The following shows the list of researchers including the contract history of the researchers.

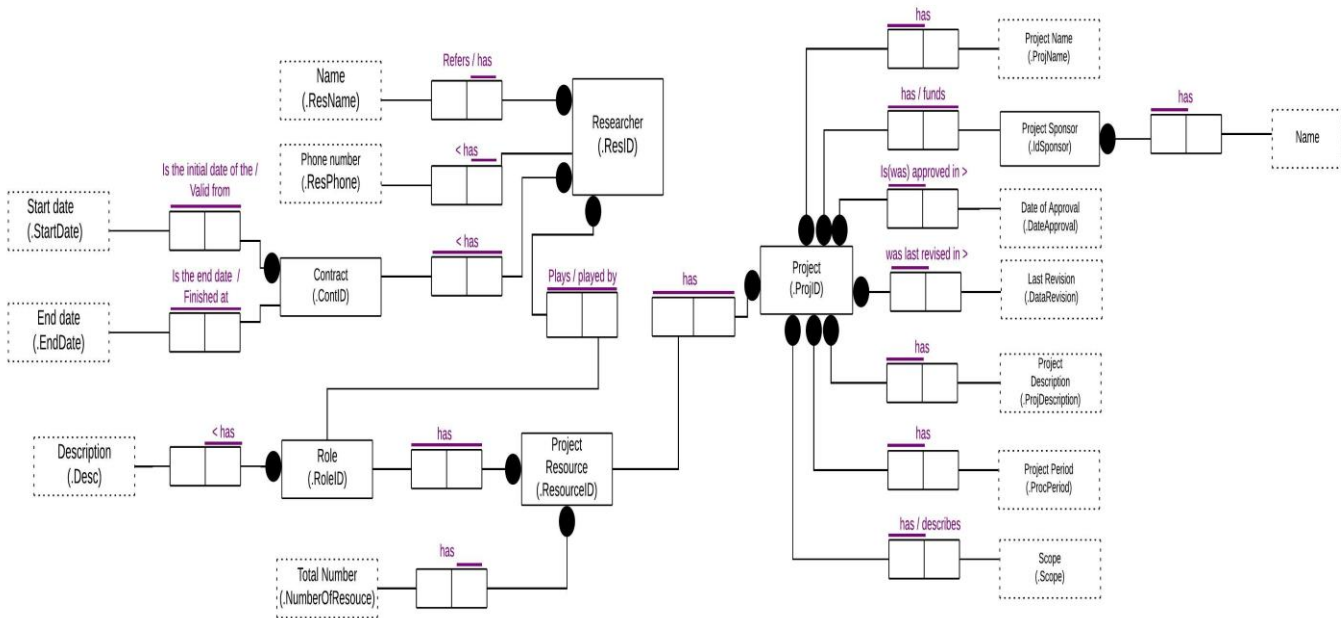
Res ID	Res name	Res phone	Contract	
			Start date	End date
R100	Charlie	4663451	15/03/1990	
R101	Isabella	4663452	01/01/2010	31/12/2015
			01/01/2017	
R102	Jacob	4663453	15/03/2001	
R103	Damian	4663454	02/06/2015	31/12/2015
			01/03/2017	05/09/2018
R104	Harry	4663455	01/02/2003	
R105	James	4663456	15/03/2017	14/12/2018
R106	Michelle	4663457	12/07/2016	
R107	Kyle		01/11/2019	
R108	Amelia	4663459	15/12/2017	
R109	Tom	4663460	01/02/2020	

A research project is reported in a form of project charter which describes some important information of the project (e.g., the project name, period, scope, resources, etc.) as shown in the following. A researcher involved in a project plays one role of 'Principal Investigator (PI)', 'Sub Investigator (SI)', 'Regulatory Coordinator (RC)' or 'Data Coordinator (DC)'. As shown in the examples, the full names of the roles are not used in a project charter. The project resource of the charter presents all participating researchers.

Research Project Charter (1)			
Project Name	Data Governance for Secondary Use of Data		
Project Sponsor	QUT, Queensland Government		
Date of Approval	01/02/2020	Last Revision	03/02/2020
Project Description	To improve privacy of data subjects, and prevent abuse/misuse of data for secondary purpose		
Project Period (year)	2		
Scope	Analyze legal requirements and develop a governance framework		
.....			
Project Resource	Role	Name	
	PI	Charlie (R100)	
	SI	Jacob (R102)	
	SI	Harry (R104)	
	SI	Michelle (R106)	
	RC	Kyle (R107)	
	DC	Amelia (R108)	
	Total Number	6	

Research Project Charter (2)			
Project Name	Contingency Model for Data Governance		
Project Sponsor	QUT		
Date of Approval	15/05/2017	Last Revision	20/05/2017
Project Description	To support decision-making of the governing body based on the different contingencies		
Project Period (year)	1		
Scope	Develop a new contingency model and conduct case studies		
.....			
Project Resource	Role	Name	
	PI SI SI RC	Damian (R103) Isabella (R101) James (R105) Michelle (R106)	
	Total Number	4	

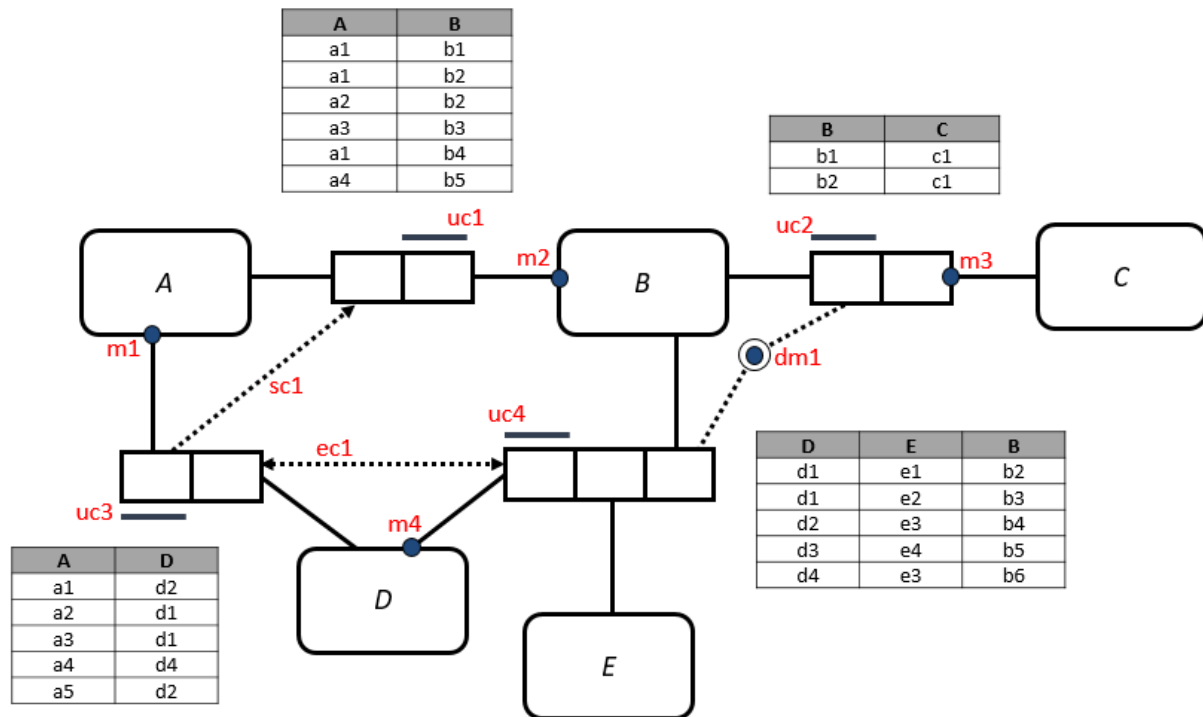
Answer for task 1



Task 2

Review the following conceptual schema diagram (and the population) and **discuss each constraint whether it is violated and the reason**.

For example, *m1* is not violated as each object instance plays role one.



- m1 ~ m4: mandatory role constraint
- uc1 ~ uc4: uniqueness constraint
- sc1: subset constraint
- ec1: equality constraint
- dm1: disjunctive mandatory role constraint

Answer for task 2

m1 ~ m4 are not violated.

uc1, uc4 are violated as there are repeated values.

uc2, uc3 are not violated as all the values are unique.

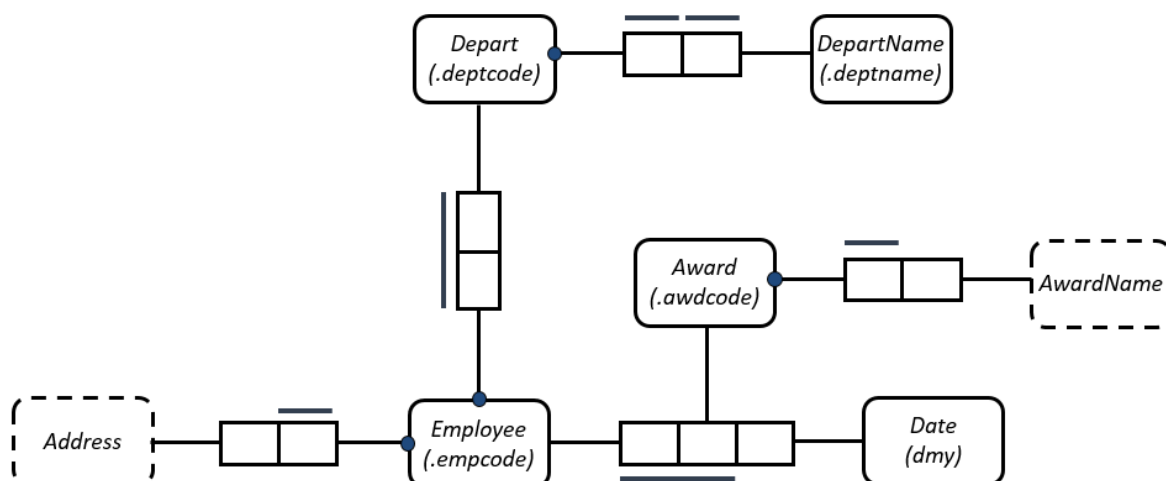
sc1 is not violated as all the values are the subset of the others.

ec1 is violated as d3 is not found in both.

dm1 is not violated as the values are present as **OR/BOTH**. (b2 is present in both whereas b1, b3, b4, b5, b6 are present either of them).

Task 3

Following is an ORM model for employee. **Map the schema to a relational database schema**. Any possible constraints need to be included (e.g., primary key, foreign key).



Answer for task 3

Award (awdcode, awardname, [empcode], [date])

Employee(empcode, deptcode, [awdcode], address, [dmy])

Depart(deptcode, deptname)

Appendix A – Declaration template

By submitting this assignment, I am aware of the University rule that a student must not act in a manner which constitutes academic dishonesty as stated and explained in the QUT Manual of Policies and Procedures. I confirm that this work represents my individual effort. I declare that it does not contain plagiarized material.

Full Name	Student No.	Signature
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