

CSE370 – Database Systems
Assignment 04
Spring 2023

1. Consider the following relation:

Project_Grade_Upgraded(Project_ID, Student_ID, Student_Name, Semester, Course, Section, Project_Title, Grade, Submission, Bonus)

Additional dependencies are as below:

FD1 - Project_ID -> Project_Title

FD2 - Student_ID -> Student_Name, Semester

FD3 - Submission -> Bonus

FD4 - Course, Section -> Grade

Give reasons to explain if this is in 1NF or not. If not, decompose it to 1NF.

Give reasons to explain if this is in 2NF or not. If not, decompose it to 2NF.

Give reasons to explain if this is in 3NF or not. If not, decompose it to 3NF.

- 2.

purchase_id	role_name	organization	unit_cost	count	paid_on
p0109	super_admin	Amazon Web Services	33.26	1850	2020-06-01
p0110	admin	Alibaba Cloud	26.78	1600	2020-06-21
p0111	admin	Host Gator	25.99	100	2020-06-21
p0112	auditor	Namecheap	18.19	552	2020-06-30
p0113	super_admin	Google Cloud	32.98	2000	2020-07-07
p0114	auditor	Digital Ocean	20.01	90	2020-07-15
p0115	super_admin	Microsoft Azure	33.85	1500	2020-07-16
p0116	auditor	Blue Host	20.12	100	2020-07-27

Now write the SQL statement for the following questions.

- A. Add two more rows with some relevant records.
- B. Show the “amount” of each organization. (amount = unit_cost*10+count)
- C. Find the “role_name” and the “organization” if the ‘organization’ starts with “A” or ends with “d”.
- D. Find the “purchase_id” and “role_name” if the “unit_cost” is more than 30 and paid after June, 2020.
- E. Select organization, count(*) from Billing where count < 1000 group by role_name.