

Task 1.

No. Table is said to be in BCNF if and only if, for each nontrivial dependence of the form $A \rightarrow B$, A is a superkey of R.

Task 2.

UnitID	StudentID	TutorID	Grade
U1	St1	Tut1	4.7
U2	St1	Tut3	5.1
U1	St4	Tut1	4.3
U5	St2	Tut3	4.9
U4	St2	Tut5	5.0

UnitID	Date	Room	Topic	Book
U1	23.02.03	629	GMT	Deumlich
U2	18.11.02	631	Gln	Zehnder
U5	05.05.03	632	PhF	Dümmlers
U4	04.07.03	621	AVQ	SwissTopo

TutorID	TutEmail
Tut1	tut1@fhbb.ch
Tut3	tut3@fhbb.ch
Tut5	tut5@fhbb.ch

Task 3.

ProjectName	ProjectManager
Project1	Manager1
Project2	Manager2

ProjectName	Budget	TeamSize
Project1	1 kk \$	15
Project2	1.5 kk \$	12

ProjectManager	Position
Manager1	CTO
Manager2	CTO2

Task 4.

Group	Speciality
g1	s1
g2	s2

Speciality	Faculty
s1	f1
s2	f2

Task 5.

ProjectID	Department	Curator	TeamSize
p1	d1	e1	100
p2	d2	e2	120

TeamSize	ProjectGroupsNumber
100	5
120	6

Task 6.

Three design goals for relational databases:

1. BCNF.
2. Losslessness.
3. Dependency preservation.

Desirable decompositions: Dependency preserving decompositions, lossless join.

Undesirable decompositions: Lossy decomposition.