Lab5 DB U.M.

Task 1

In BCNF, every non-prime attribute should be functionally dependent on any of super key in schema. If there exists any FD, which don't follow this, then for that case we have to separate it into new relation. Now if any of other FD uses previous FD, then this creates non preservation of FD in BCNF

Task 2

UnitID	StudentID	Dr_ID	Grade	Teaches_ID
U1	St1	Dr1	4.7	T1
U2	St1	Dr2	5.1	T2
U1	St4	Dr1	4.3	T1
U5	St2	Dr3	4.9	T3
U4	St2	Dr4	5.0	T4

Date_room_ID	Date	Room
Dr1	23.02.03	629
Dr2	18.11.02	631
Dr3	05.05.03	632
Dr4	04.07.03	621

Teaches_ID	SubjectID	TotorID
T1	Sub1	Tut1
T2	Sub2	Tut3
T3	Sub3	Tut3
T4	Sub4	Tut5

SubjectID	Topic	Book
Sub1	GMT	Deumlich
Sub2	Gln	Zehnder
Sub3	PhF	Dümmlers
Sub4	AVQ	SwissTopo

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

Task 3

ProjectName	ProjectManager
Project1	Manager1
Project2	Manager2

ProjectManager	Position	Team size
Project1	CTO	15
Project2	CTO2	12

ProjectName	Budget

Project1	1 kk $
Project2	1.5 kk $

Task 4

GroupID	Group name	SpecialityID
g1	Group1	s1
g2	Group2	s2

SpecialityID	Speciality name	FacultyID
s1	Inf Systems	f1
s2	Comp Software and engineering	f1

FacultyID	Faculty name
f1	FIT
f2	BS

Task 5

ProjectID	Curator	TeamID
p1	e1	T1
p2	e2	T2

TeamID	TeamSize	ProjectGroupsNumber
T1	100	5
T2	120	6

CuratorID	Department
e1	d1
e2	d2

Task 6. List the three design goals for relational databases, and explain why each is desirable. Give an example of both desirable and undesirable types of decompositions.

The three design goals are lossless-join decompositions, dependency preserving decompositions, and minimization of repetition of information. They are desirable so we can maintain an accurate database, check correctness of updates quickly, and use the smallest amount of space possible.