Room

id	INTEGER	PRIMARY KEY
name	STRING	NULL
number	STRING	
building	FOREIGN KEY (Building -> id)	
UNIQUE (building, name)		
UNIQUE (building, number)		

Building

id	INTEGER	PRIMARY KEY
name	STRING	UNIQUE
address	STRING	

Feature

id	INTEGER	PRIMARY KEY
name	STRING	UNIQUE

providesFeature (Room, Feature)

room	FOREIGN KEY (Room -> id)	
feature	FOREIGN KEY (Feature -> id)	
quantity	INTEGER	>= 0
PRIMARY KEY (room, feature)		

Department

id	INTEGER	PRIMARY KEY
name	STRING	UNIQUE

givesCourse (Lecturer, Course)

lecturer	FOREIGN KEY (Lecturer -> id)	
course	FOREIGN KEY (Course -> id)	
priority	FLOAT	
PRIMARY KEY (lecturer, course)		

Timeslot

id	INTEGER	PRIMARY KEY
day	FOREIGN KEY (Day -> id)	

Day

id	INTEGER	PRIMARY KEY
name	STRING	UNIQUE

roomNotAvailable (Room, Timeslot)

room	FOREIGN KEY (Room -> id)	
timeslot	FOREIGN KEY (Timeslot -> id)	
PRIMARY KEY (room, timeslot)		

lecturerPrefers (Lecturer, Timeslot)

lecturer	FOREIGN KEY (Lecturer -> id)	
timeslot	FOREIGN KEY (Timeslot -> id)	
priority	INTEGER	0 ≤ priority ≤ 100
PRIMARY KEY (lecturer, timeslot)		

lecturerNotAvailable (Lecturer, Timeslot)

lecturer	FOREIGN KEY (Lecturer -> id)	
timeslot	FOREIGN KEY (Timeslot -> id)	
PRIMARY KEY (lecturer, timeslot)		

roomPreferablyBookedAt (Room, Timeslot)

room	FOREIGN KEY (Room -> id)	
timeslot	FOREIGN KEY (Timeslot -> id)	
priority	INTEGER	0 ≤ priority ≤ 100
PRIMARY KEY (room, timeslot)		

belongsTo (Department, Department)

department	FOREIGN KEY (Department -> id)	
parent	FOREIGN KEY (Department -> id)	
PRIMARY KEY (department, parent)		

requiresFeatureAlways (CourseElement, Feature)

course_element	FOREIGN KEY (CourseElement -> id)	
feature	FOREIGN KEY (Feature -> id)	
quantity_min	INTEGER	NULL
quantity_better	INTEGER	NULL
priority	INTEGER	0 ≤ priority ≤ 100
PRIMARY KEY (course_element, feature)		

requiresFeature (CourseElementInstance, Feature)

element_instance	FOREIGN KEY (CourseElementInstance)	
feature	FOREIGN KEY (Feature -> id)	
quantity_min	INTEGER	NULL
quantity_better	INTEGER	NULL
priority	INTEGER	0 ≤ priority ≤ 100
PRIMARY KEY (element_instance, feature)		

Configuration

key	STRING	PRIMARY KEY
value	STRING	

preferredBooking (ElementInstance, Timeslot, Room)

element_instance	FOREIGN KEY (CourseElementInstance)	
timeslot	FOREIGN KEY (Timeslot -> id)	
room	FOREIGN KEY (Room -> id)	
priority	INTEGER	0 ≤ priority ≤ 100
PRIMARY KEY (element_instance, timeslot, room)		

Person

id	INTEGER	PRIMARY KEY
first_name	STRING	
last_name	STRING	
mail_address	STRING	UNIQUE
login_name	STRING	UNIQUE
is_superuser	BOOLEAN	DEFAULT false
created	TIMESTAMP	
deleted	TIMESTAMP	NULL
deleted_by	FOREIGN KEY (Person -> id)	

Lecturer

id	FOREIGN KEY (Person -> id)	
lecturer_id	STRING	UNIQUE
PRIMARY KEY (id)		

Student

id	FOREIGN KEY (Person -> id)	
student_id	STRING	UNIQUE
matriculated	BOOLEAN	DEFAULT true
PRIMARY KEY (id)		

Staff

id	FOREIGN KEY (Person -> id)	
staff_id	STRING	UNIQUE
working_hours	INTEGER	>= 0
employed	BOOLEAN	DEFAULT true
PRIMARY KEY (id)		

Group

id	INTEGER	PRIMARY KEY
name	STRING	UNIQUE

Role

id	INTEGER	PRIMARY KEY
name	STRING	UNIQUE

Permission

id	INTEGER	PRIMARY KEY
name	STRING	UNIQUE

hasPermission (Person, Permission)

user	FOREIGN KEY (Person -> id)	
permission	FOREIGN KEY (Permission -> id)	
target	STRING	NULL
granted_by	FOREIGN KEY (Person -> id)	
since	TIMESTAMP	
because_of_role	BOOLEAN	DEFAULT false
PRIMARY KEY (user, permission, target)		

hasRole (Person, Role)

user	FOREIGN KEY (Person -> id)	
role	FOREIGN KEY (Role -> id)	
set_by	FOREIGN KEY (Person -> id)	
since	TIMESTAMP	
PRIMARY KEY (user, role)		

impliesPermission (Role, Permission)

role	FOREIGN KEY (Role -> id)	
permission	FOREIGN KEY (Permission -> id)	
target	STRING	NULL
PRIMARY KEY (role, permission, target)		

isInGroup (Person, Group)

user	FOREIGN KEY (User -> id)	
group	FOREIGN KEY (Group -> id)	
set_by	FOREIGN KEY (Person -> id)	
since	TIMESTAMP	
PRIMARY KEY (user, group)		

takesPartIn (Lecturer, Room)

event	FOREIGN KEY (Event -> id)	
lecturer	FOREIGN KEY (Lecturer -> id)	
timeslot	FOREIGN KEY (Timeslot -> id)	
UNIQUE (lecturer, timeslot)		
PRIMARY KEY (event, lecturer)		

hasPassedCourse (Student, Course)

student	FOREIGN KEY (Student -> student_id)	
course	FOREIGN KEY (Course -> id)	
grade	STRING	NULL
notes	TEXT	NULL
date	DATE	
set_by	FOREIGN KEY (Person -> id)	
PRIMARY KEY (student, course)		

Attribute

id	INTEGER	PRIMARY KEY
name	STRING	UNIQUE
type	STRING	DEFAULT xsd:string
unique_value	BOOLEAN	DEFAULT false

impliesAttribute (Role, Attribute)

role	FOREIGN KEY (Role -> id)	
attribute	FOREIGN KEY (Attribute -> id)	
default	STRING	NULL
required	BOOLEAN	DEFAULT false
PRIMARY KEY (role, attribute)		

hasAttribute (Person, Attribute)

user	FOREIGN KEY (Person -> id)	
attribute	FOREIGN KEY (Attribute -> id)	
value	STRING	NULL
PRIMARY KEY (user, attribute)		

Course

id	INTEGER	PRIMARY KEY
name	STRING	UNIQUE

CourseElement

id	INTEGER	PRIMARY KEY
name	STRING	NULL
part_of	FOREIGN KEY (Course -> id)	
duration	INTEGER	>= 1
type	FOREIGN KEY (CourseElementType -> id)	
required	BOOLEAN	DEFAULT true

CourseInstance

id	INTEGER	PRIMARY KEY
program	FOREIGN KEY (Program -> id)	
start	DATE	
end	DATE	
main_lecturer	FOREIGN KEY (Lecturer -> lecturer_id)	

CourseElementInstance

id	INTEGER	PRIMARY KEY
course_instance	FOREIGN KEY (CourseInstance -> id)	
course_element	FOREIGN KEY (CourseElement -> id)	
starting_timeslot	FOREIGN KEY (Timeslot -> id)	
duration	INTEGER	>= 1
locked	BOOLEAN	DEFAULT false
scheduled	BOOLEAN	DEFAULT false
scheduler_score	FLOAT	DEFAULT 0
schedulable_lesson	BOOLEAN	DEFAULT true

CourseElementType

id	INTEGER	PRIMARY KEY
name	STRING	UNIQUE

Program

id	INTEGER	PRIMARY KEY
academic_term	FOREIGN KEY (AcademicTerm -> id)	
department	FOREIGN KEY (Department -> id)	
freezed	BOOLEAN	DEFAULT false
published	BOOLEAN	DEFAULT false
program_manager	FOREIGN KEY (Person -> id)	

requiresCourse (Course, Course)

course	FOREIGN KEY (Course -> id)	
dependency	FOREIGN KEY (Course -> id)	
PRIMARY KEY (course, dependency)		

Year

id	INTEGER	PRIMARY KEY
name	STRING	UNIQUE

AcademicTerm

id	INTEGER	PRIMARY KEY
start	DATE	
end	DATE	
start_lessons	DATE	
end_lessons	DATE	
name	STRING	UNIQUE
start ≤ start_lessons ≤ end_lessons ≤ end		

takesPlaceIn (CourseElementInstance, Room)

event	FOREIGN KEY (CourseElementInstance)	
room	FOREIGN KEY (Room -> id)	
timeslot	FOREIGN KEY (Timeslot -> id)	
UNIQUE (room, timeslot)		
PRIMARY KEY (event, room)		

enrolledInCourse (Student, CourseInstance)

student	FOREIGN KEY (Student -> id)	
course_instance	FOREIGN KEY (CourseInstance -> id)	
since	TIMESTAMP	
PRIMARY KEY (user, course_instance)		

recommendedInYear (Course, Year)

course	FOREIGN KEY (Course -> id)	
year	FOREIGN KEY (Year -> id)	
PRIMARY KEY (course, year)		

courseHasAttribute (Course, CourseAttribute)

course	FOREIGN KEY (Course -> id)	
attribute	FOREIGN KEY (CourseAttribute -> id)	
value	STRING	NULL
PRIMARY KEY (course, attribute)		

CourseAttribute

id	INTEGER	PRIMARY KEY
name	STRING	UNIQUE
type	STRING	DEFAULT xsd:string
required	BOOLEAN	DEFAULT false