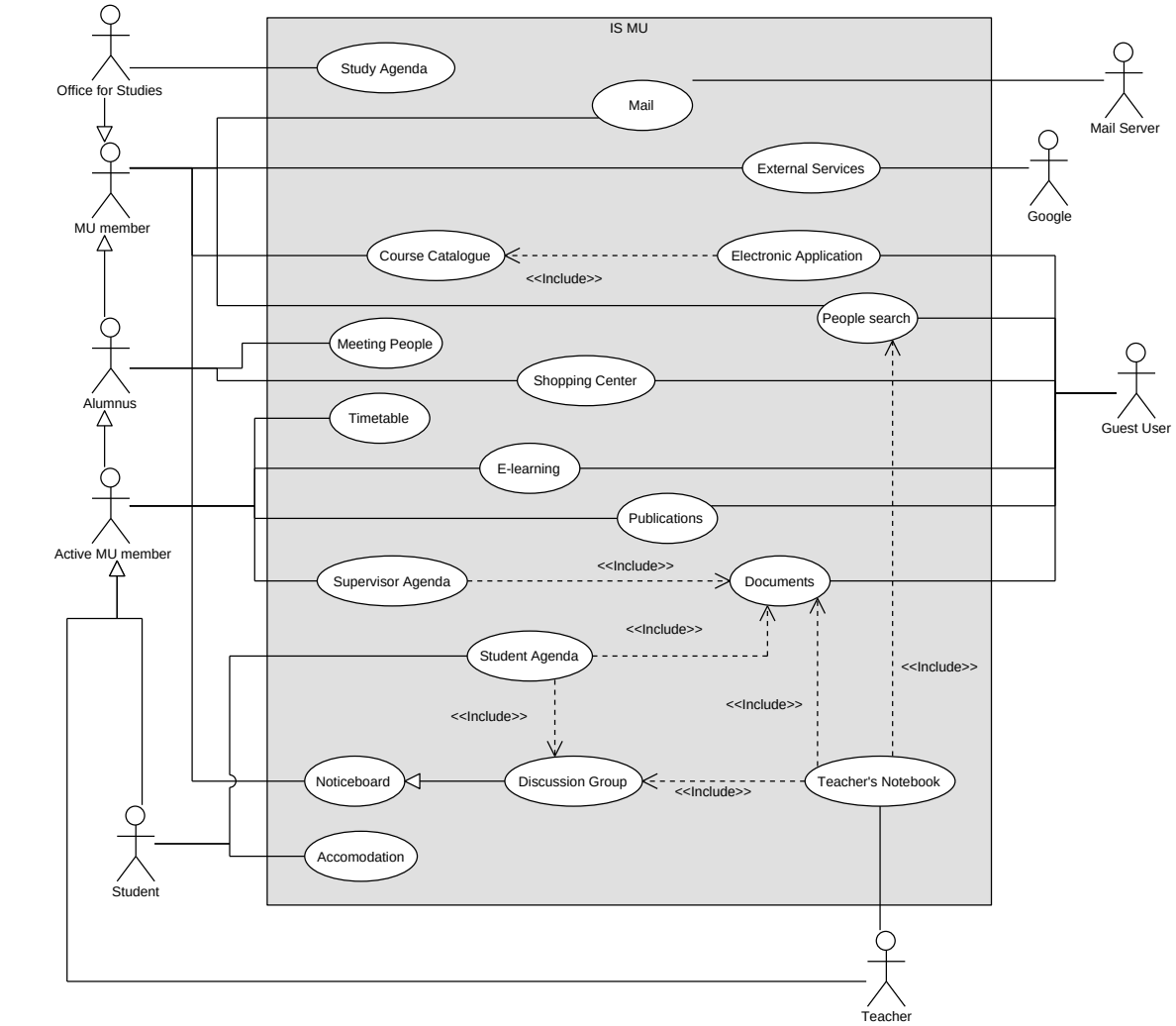
IS MU - PV167 Project

Faculty of Informatics
Radek Oslejsek

Use Case Diagram

Overview

Hala 422551
Bocanova 422450



Name	Value
Name	Overview
Show Information Item Option	2

Summary

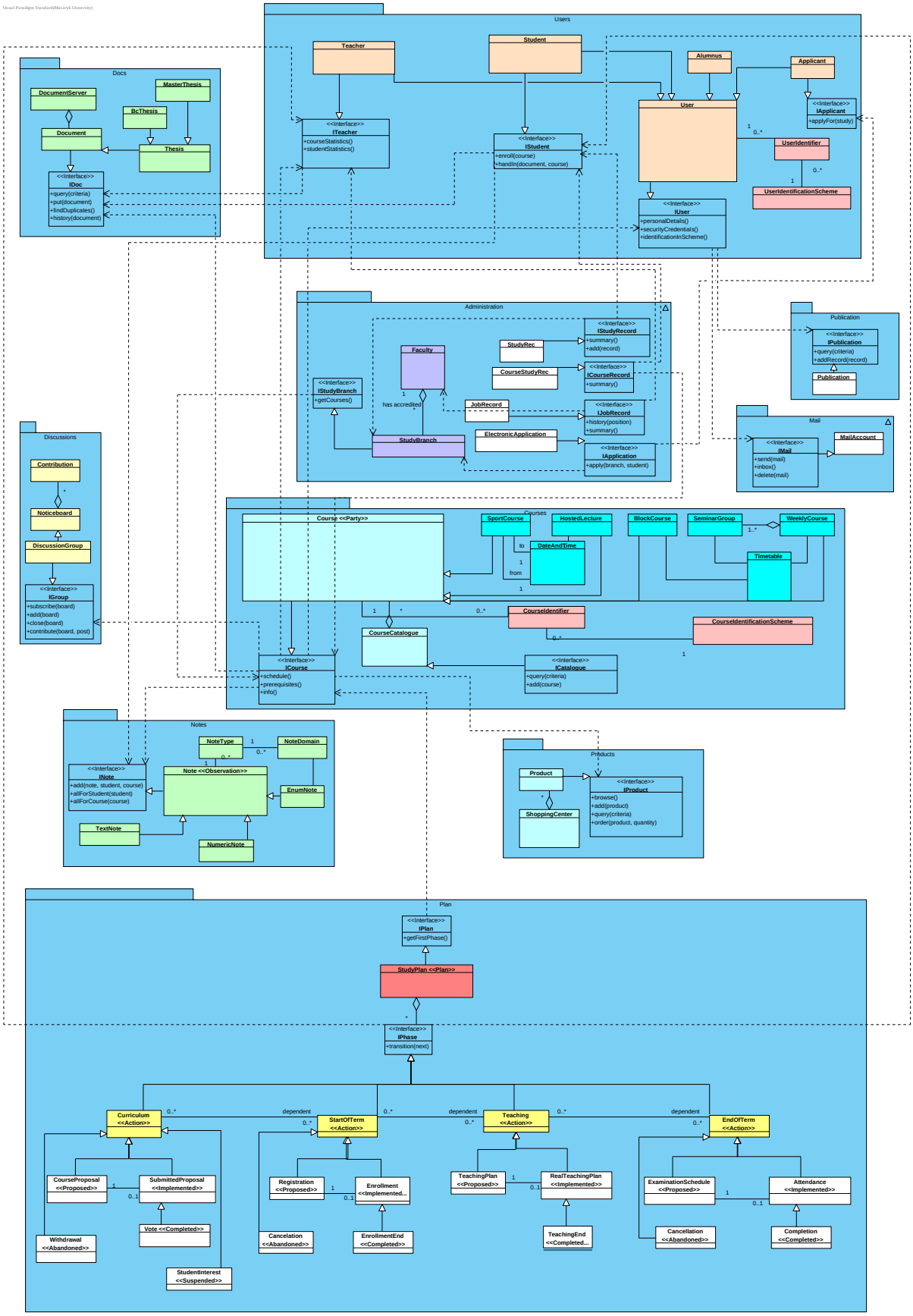
Name	Description
Office for Studies	Employee of the office for studies.
MU member	
Alumnus	Ex-student, e.g. a past student with no active study at MU.
Active MU member	User with active relationship with MU, e.g. active student, internal or external teacher, employee, etc.
Student	Active student, i.e. a student with at least one active study at MU.

Teacher	Internal or external teacher. This role includes PhD students as well.
Google	Currently, this actor covers Google Apps, Google Mail and Google Disk.
Mail Server	SMTP server for sending e-mail. Incoming mails are stored directly in IS MU.
Guest User	Non-authenticated user, e.g. guest users, applicants, etc.
N/A	Hala 422551 Bocanova 422450
Electronic Application	Users can create and submit electronic applications to MU, browse study fields, view status of submitted applications, view statistics, etc.
Shopping Center	Users can purchase products and services offered by MU, e.g. courses, books, gifts, cards. It's possible to pay via various methods, check status of orders and print invoice.
Accomodation	Students can find available dormitory accommodation as well as information about school-owned canteens. Dormitory fees are paid using electronic account accessible and manageable from this agenda.
E-learning	Active members can prepare E-courses using provided tools and templates. Courses can be labeled and categorized based on difficulty level, topic, estimated completion time etc. Any visitor to the site can start any E-course, however progress saving is only offered to registered users.
Meeting People	MU members can contact, exchange information with and cooperate with other members even after graduation (the access to IS MU and e-mail account are for life). Some of the tools to achieve this are Activities (displays activities of friends and group members), Personal Page, My Friends, Groups, Blogs, Discussion Group, Noticeboard, Bookmarks, etc.
External Services	MU members can use free external services from providers like Google, Microsoft. Services compatible with MU account are Google Mail, Google Disk and Documents, Google Calendar, Google Keep, etc.
Discussion Group	All registered users can join discussion here with both read and write access. Any registered member can start and moderate new topical group. Each course has associated discussion group moderated by teachers of the course.
Noticeboard	Globally visible space where notices can be posted by the school administration, IS administration or other authorized personnel. Notices have assigned priority and target group, only members of the target group can see the notice.
Documents	Serves as a repository for arbitrary textual data, media etc. Each user has their own document repository where they can upload anything within allowed quotas. Document owner can choose to publish it to other selected users or publicly.
Course Catalogue	Users can search information about any course in the Course Catalogue. Some of the searching criteria are course name, abstract, teacher, code, faculty, etc. 'AND', 'OR', '%' can be used in searched expression. It's also possible to browse and print faculty or term calendars.

Timetable	Active MU members can display and print their timetable in various formats. There are several types of timetable, e.g. student timetable, timetable of a course(s), timetable of a teacher(s), timetable of rooms.
Student Agenda	Student can access materials for enrolled courses and browse catalogue of all available courses. Student can display summary information about their studies and statistical comparison to other students. Study related events, such as new awarded course points or seminar attendance info, are aggregated in the agenda. Student can choose to monitor any discussion group, new events from the group will pop up as events in the agenda.
Publications	Active members can list their publications such as journal entries and books. Any visitor to the site can browse and search for publications submitted by the users.
Supervisor Agenda	Course supervisors can use this agenda to upload materials for the course. Submitted homework can be viewed by the supervisors for grading, feedback for students can be posted here.
Teacher's Notebook	There is one notebook per course taught, one user can teach any number of courses simultaneously. List of students enrolled in the course is available, students can be graded and group emails can be sent to all students of the course. Teacher can choose to be notified of any posts in the discussion group associated with the course. Teacher can upload materials for the course and set visibility of the uploaded materials.
Study Agenda	Office for Studies has access to information about courses, information about studies of specific students, managing study fields, managing absences, etc.
People search	Users can search for a MU member by their name and surname. There are advanced search options like relation to the university (employee, student, inactive member), faculty.
Mail	MU members can send or receive e-mails via mail.muni.cz domain. It's also possible to save contacts, manage folders, forward messages to another e-mail address, turn on/off spam filter, set automatic signature, etc.
IS MU	

Class Diagram

Problem Domain Model



Name	Value
Name	Problem Domain Model
Show Information Item Option	2

Summary

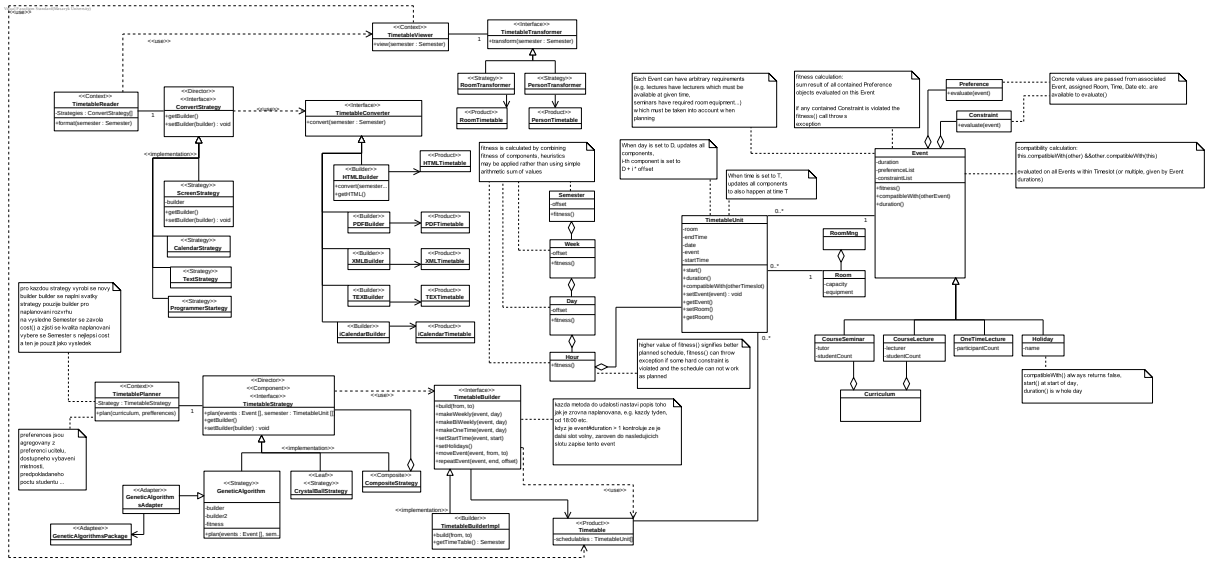
Name	Description
Users	
Student	
Teacher	
Alumnus	
Applicant	
Docs	
MasterThesis	
DocumentServer	
IApplicant	
User	
BcThesis	
ITeacher	
Document	
IStudent	
UserIdentifier	
Thesis	
IDoc	
UserIdentificationScheme	
IUser	
Administration	
Publication	
IStudyRecord	
IPublication	
StudyRec	
Faculty	
ICourseRecord	
CourseStudyRec	
Publication	
IStudyBranch	
JobRecord	
IJobRecord	
Mail	
Discussions	
ElectronicApplication	
MailAccount	
StudyBranch	

IMail	
IApplication	
Contribution	
Courses	
Noticeboard	
Course <<Party>>	
SportCourse	
HostedLecture	
BlockCourse	
SeminarGroup	
WeeklyCourse	
DiscussionGroup	
DateAndTime	
Timetable	
IGroup	
CourseIdentifier	
CourseIdentificationScheme	
CourseCatalogue	
ICourse	
ICatalogue	
Notes	
NoteType	
NoteDomain	
Products	
INote	
Note <<Observation>>	
Product	
IProduct	
EnumNote	
ShoppingCenter	
TextNote	
NumericNote	
Plan	
IPlan	
StudyPlan <<Plan>>	
IPhase	
Curriculum <<Action>>	
Teaching <<Action>>	
StartOfTerm <<Action>>	
EndOfTerm <<Action>>	
TeachingPlan <<Proposed>>	
RealTeachingPlan <<Implemented>>	

CourseProposal <<Proposed>>	
SubmittedProposal <<Implemented>>	
Registration <<Proposed>>	
Enrollment <<Implemented>>	
ExaminationSchedule <<Proposed>>	
Attendance <<Implemented>>	
Vote <<Completed>>	
TeachingEnd <<Completed>>	
Cancellation <<Abandoned>>	
Completion <<Completed>>	
Cancelation <<Abandoned>>	
EnrollmentEnd <<Completed>>	
Withdrawal <<Abandoned>>	
StudentInterest <<Suspended>>	

Class Diagram

Schedule



Name	Value
Name	Schedule
Show Information Item Option	2

Summary

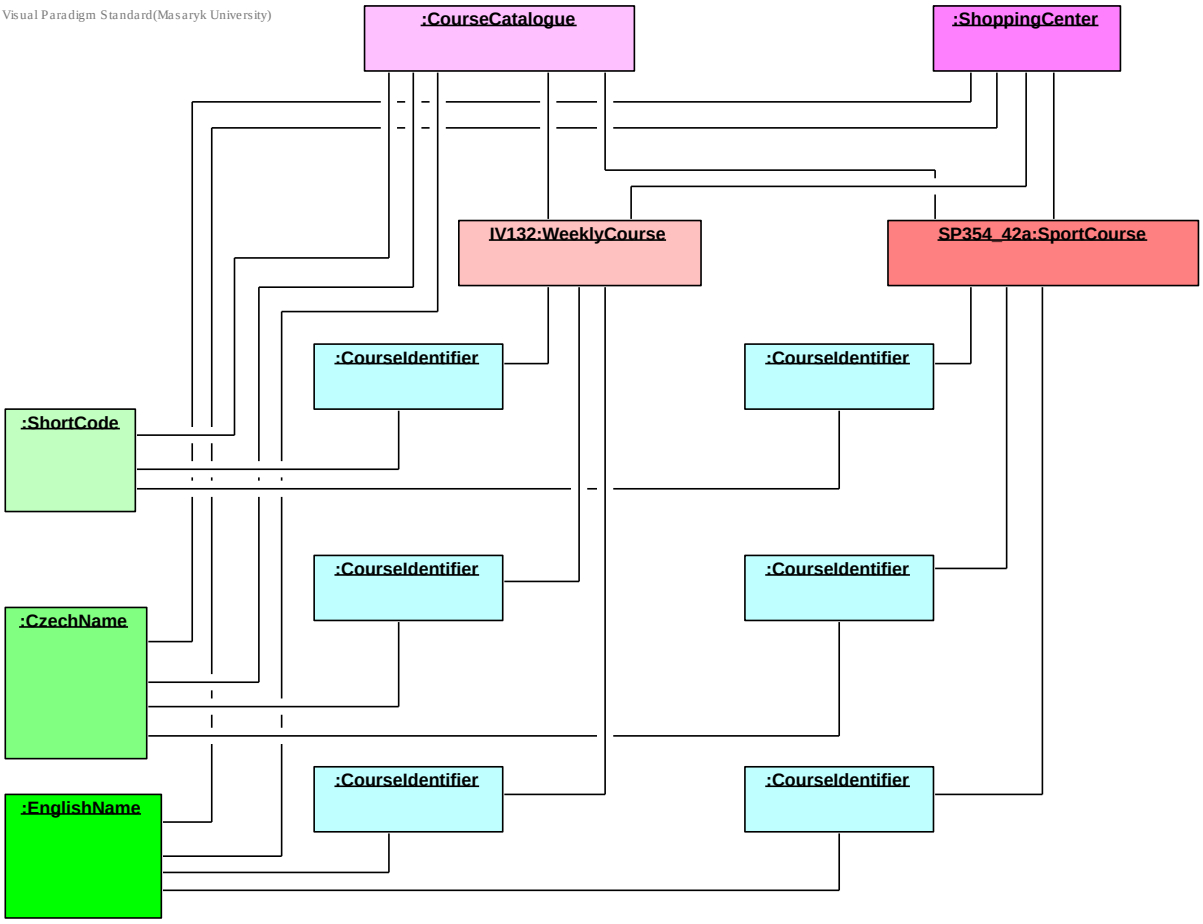
Name	Description
TimetableTransformer	
TimetableViewer	
RoomTransformer	
PersonTransformer	
Preference	
ConvertStrategy	
TimetableReader	
TimetableConverter	
RoomTimetable	
PersonTimetable	
Constraint	
Event	
HTMLTimetable	
HTMLBuilder	
ScreenStrategy	
Semester	
PDFBuilder	
PDFTimetable	
TimetableUnit	
RoomMng	

CalendarStrategy	
Week	
XMLBuilder	
XMLTimetable	
TextStrategy	
Room	
TEXBuilder	
TEXTimetable	
ProgrammerStartegy	
Day	
iCalendarBuilder	
iCalendarTimetable	
CourseSeminar	
CourseLecture	
OneTimeLecture	
Holiday	
Hour	
TimetableStrategy	
TimetablePlanner	
TimetableBuilder	
Curriculum	
GeneticAlgorithm	
CrystalBallStrategy	
CompositeStrategy	
GeneticAlgorithmsAdapter	
TimetableBuilderImpl	
Timetable	
GeneticAlgorithmsPackage	
N/A	fitness calculation: sum result of all contained Preference objects evaluated on this Event if any contained Constraint is violated the fitness() call throws exception
N/A	Each Event can have arbitrary requirements (e.g. lectures have lecturers which must be available at given time, seminars have required room equipment...) which must be taken into account when planning
N/A	Concrete values are passed from associated Event, assigned Room, Time, Date etc. are available to evaluate()
N/A	When day is set to D, updates all components, i-th component is set to D + i * offset

N/A	fitness is calculated by combining fitness of components, heuristics may be applied rather than using simple arithmetic sum of values
N/A	compatibility calculation: this.compatibleWith(other) &&other.compatibleWith(this) evaluated on all Events within Timeslot (or multiple, given by Event durations)
N/A	When time is set to T, updates all components to also happen at time T
N/A	pro kazdou strategy vyrobi se novy builder builder se naplni svatky strategy pouzije builder pro naplanovani rozvrhu na vysledne Semester se zavola cost() a zjisti se kvalita naplanovani vybere se Semester s nejlepsi cost a ten je pouzit jako vysledek
N/A	higher value of fitness() signifies better planned schedule, fitness() can throw exception if some hard constraint is violated and the schedule can not work as planned
N/A	compatibleWith() always returns false, start() at start of day, duration() is whole day
N/A	kazda metoda do udalosti nastavi popis toho jak je zrovna naplanovana, e.g. kazdy tyden, od 18:00 etc. kdyz je event#duration > 1 kontroluje ze je dalsi slot volny, zaroven do nasledujicich slotu zapise tento event
N/A	preferences jsou agregovany z preferenci ucitelu, dostupneho vybaveni mistnosti, predpokladaneho poctu studentu ...

Object Diagram

IdentificationScheme - Course



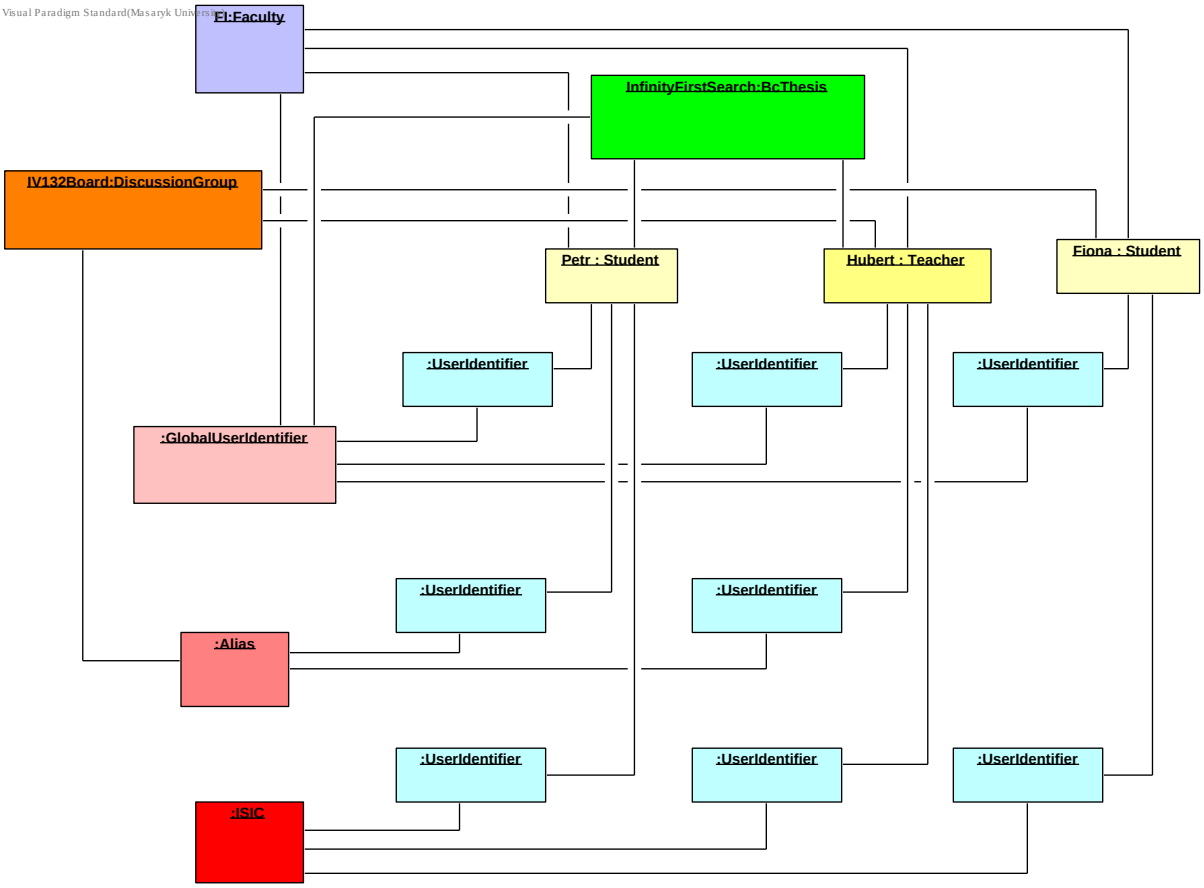
Name	Value
Name	IdentificationScheme - Course
Show Information Item Option	2

Summary

Name	Description
:CourseCatalogue	
:ShoppingCenter	
IV132:WeeklyCourse	
SP354_42a:SportCourse	
:CourseIdentifier	
:ShortCode	
:CzechName	
:EnglishName	

Object Diagram

IdentificationScheme - User



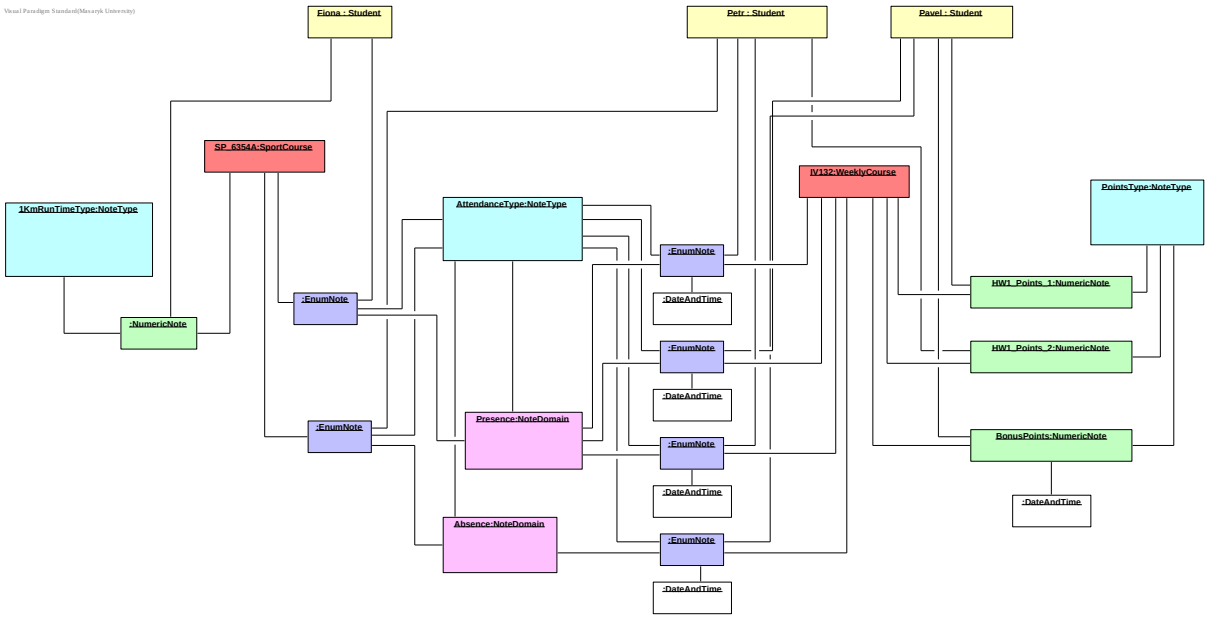
Name	Value
Name	IdentificationScheme - User
Show Information Item Option	2

Summary

Name	Description
FI:Faculty	
InfinityFirstSearch:BcThesis	
IV132Board:DiscussionGroup	
Fiona	
Petr	
Hubert	
:UserIdentifier	
:GlobalUserIdentifier	
:Alias	
:ISIC	

Object Diagram

Observation - Note



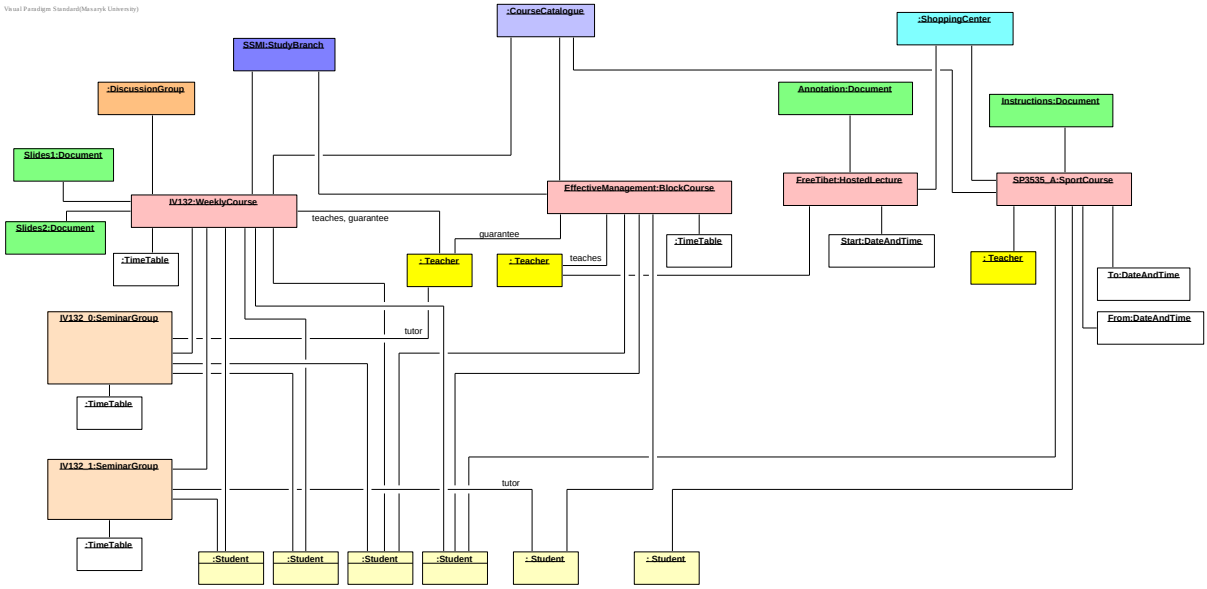
Name	Value
Name	Observation - Note
Show Information Item Option	2

Summary

Name	Description
Fiona	
Petr	
Pavel	
SP_6354A:SportCourse	
IV132:WeeklyCourse	
PointsType:NoteType	
AttendanceType:NoteType	
1KmRunTimeType:NoteType	
HW1_Points_1:NumericNote	
:DateAndTime	
:NumericNote	
:EnumNote	
HW1_Points_2:NumericNote	
Presence:NoteDomain	
BonusPoints:NumericNote	
Absence:NoteDomain	

Object Diagram

Party - Course



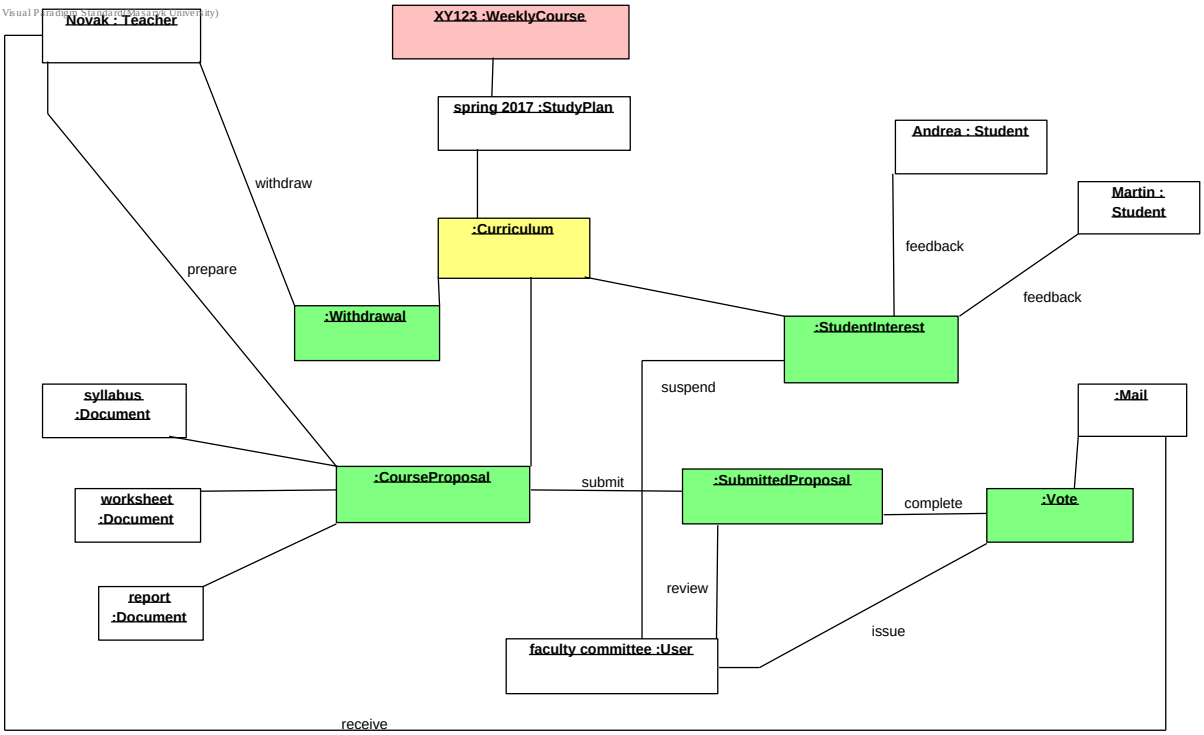
Name	Value
Name	Party - Course
Show Information Item Option	2

Summary

Name	Description
:CourseCatalogue	
:ShoppingCenter	
SSMI:StudyBranch	
:DiscussionGroup	
Annotation:Document	
Instructions:Document	
Slides1:Document	
FreeTibet:HostedLecture	
SP3535_A:SportCourse	
EffectiveManagement:BlockCourse	
IV132:WeeklyCourse	
Slides2:Document	
:TimeTable	
Start:DateAndTime	
To:DateAndTime	
IV132_0:SeminarGroup	
From:DateAndTime	
IV132_1:SeminarGroup	
:Student	

Object Diagram

Study Plan - Curriculum



Name	Value
Name	Study Plan - Curriculum
Show Information Item Option	2

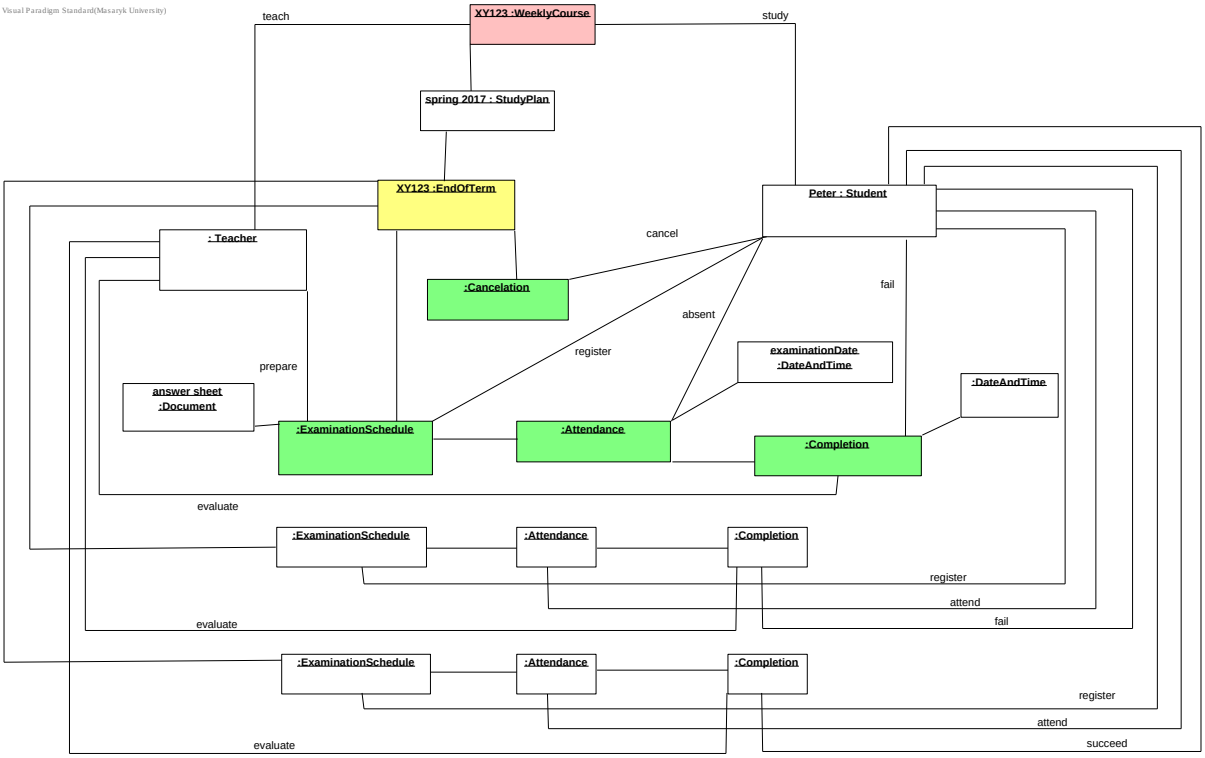
Summary

Name	Description
XY123 :WeeklyCourse	
Novak	
spring 2017 :StudyPlan	
Andrea	
Martin	
:Curriculum	
:Withdrawal	
:StudentInterest	
syllabus :Document	
:Mail	
:CourseProposal	
:SubmittedProposal	
worksheet :Document	
:Vote	
report :Document	

faculty committee :User	

Object Diagram

Study Plan - End of term



Name	Value
Name	Study Plan - End of term
Show Information Item Option	2

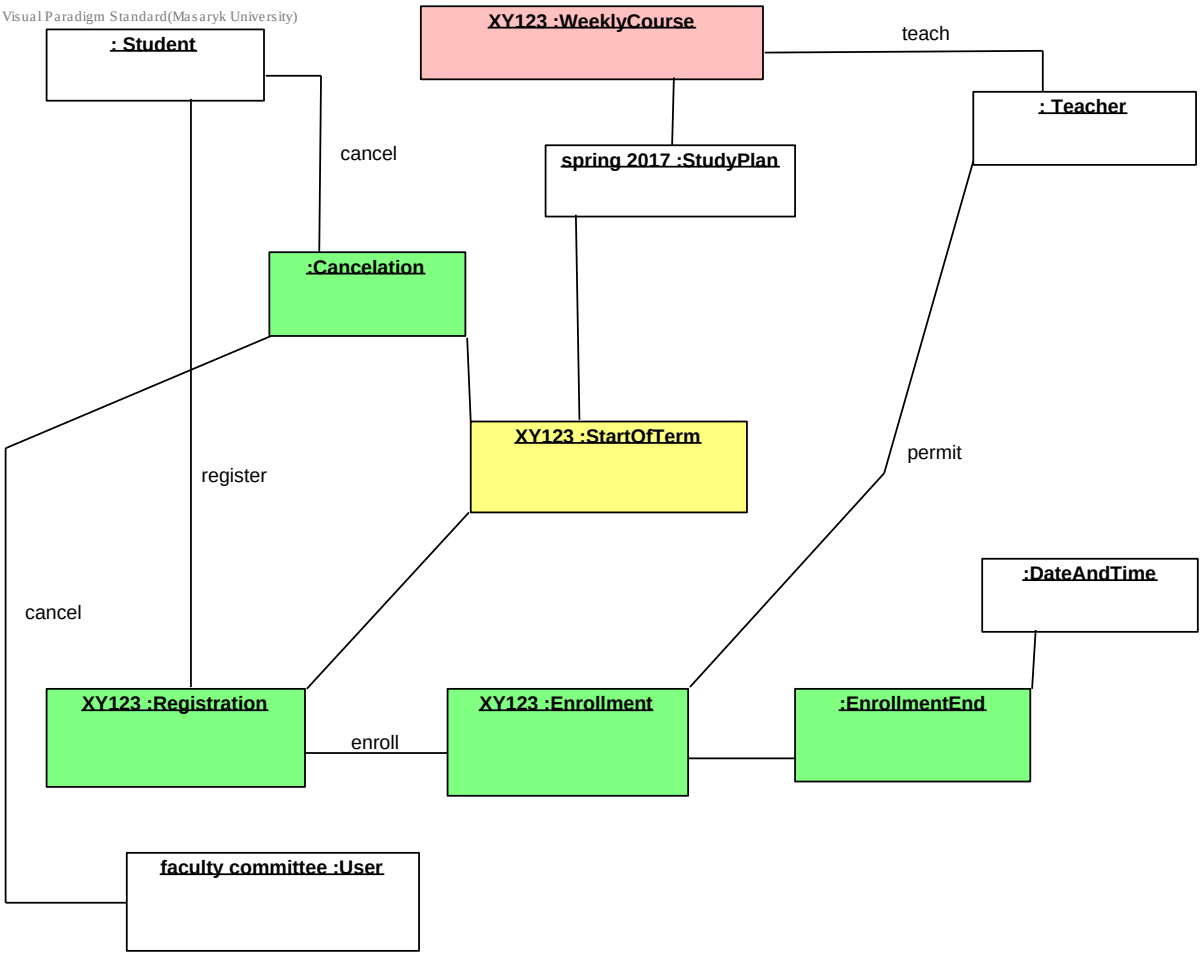
Summary

Name	Description
XY123 :WeeklyCourse	
spring 2017 : StudyPlan	
XY123 :EndOfTerm	
Peter	
:Cancelation	
examinationDate :DateAndTime	
:DateAndTime	
answer sheet :Document	
:ExaminationSchedule	
:Attendance	
:Completion	
:ExaminationSchedule	
:Attendance	
:Completion	
:ExaminationSchedule	

:Attendance	
:Completion	

Object Diagram

Study Plan - Start of term



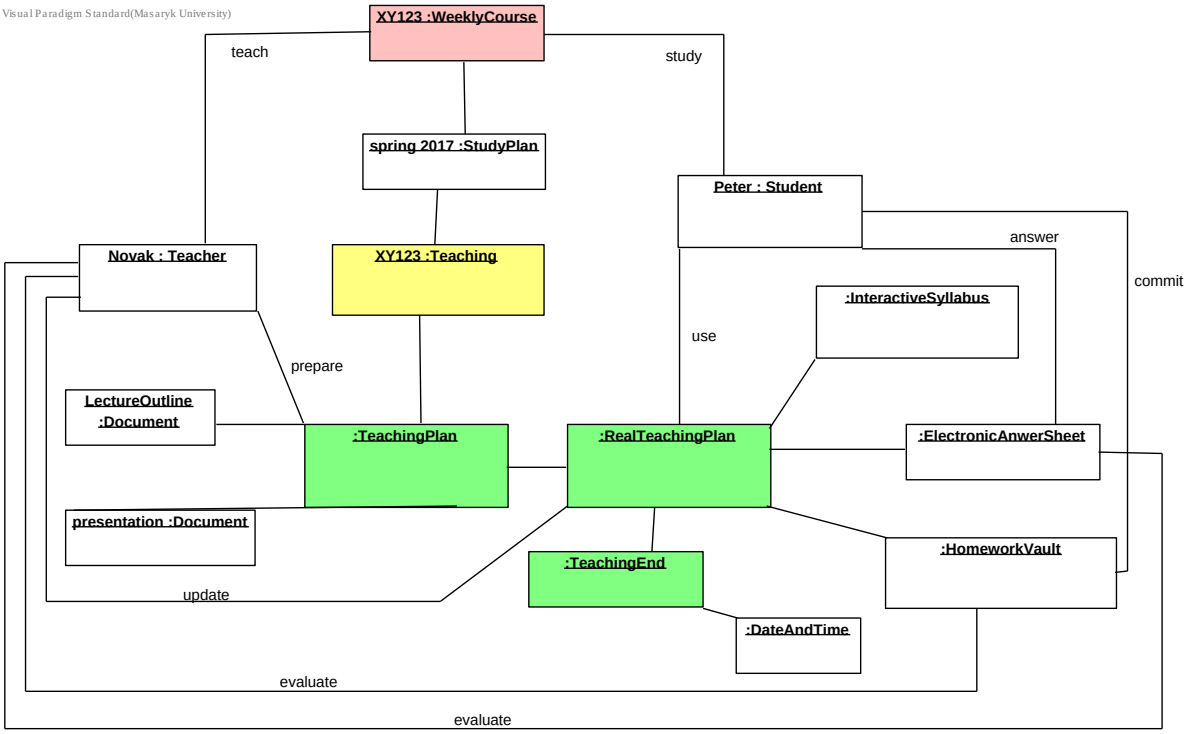
Name	Value
Name	Study Plan - Start of term
Show Information Item Option	2

Summary

Name	Description
XY123 :WeeklyCourse	
spring 2017 :StudyPlan	
:Cancelation	
XY123 :StartOfTerm	
:DateAndTime	
XY123 :Registration	
XY123 :Enrollment	
:EnrollmentEnd	
faculty committee :User	

Object Diagram

Study Plan - Teaching



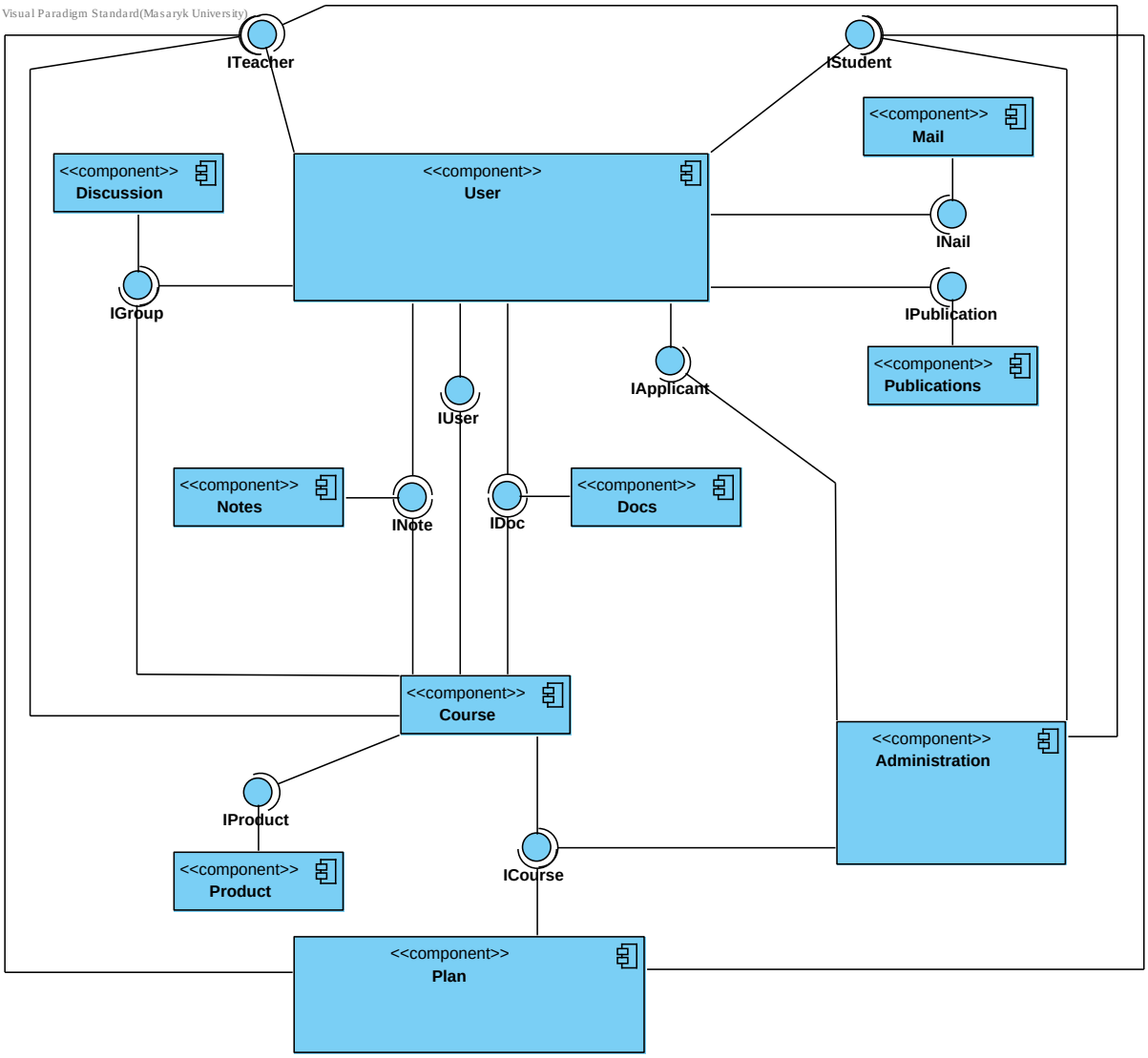
Name	Value
Name	Study Plan - Teaching
Show Information Item Option	2

Summary

Name	Description
XY123 :WeeklyCourse	
spring 2017 :StudyPlan	
Peter	
Novak	
XY123 :Teaching	
:InteractiveSyllabus	
LectureOutline :Document	
:TeachingPlan	
:RealTeachingPlan	
:ElectronicAnwerSheet	
presentation :Document	
:HomeworkVault	
:TeachingEnd	
:DateAndTime	

Component Diagram

Component Diagram1



Name	Value
Name	Component Diagram1
Show Information Item Option	2
Show Component Attributes	false
Show Component Operations	false

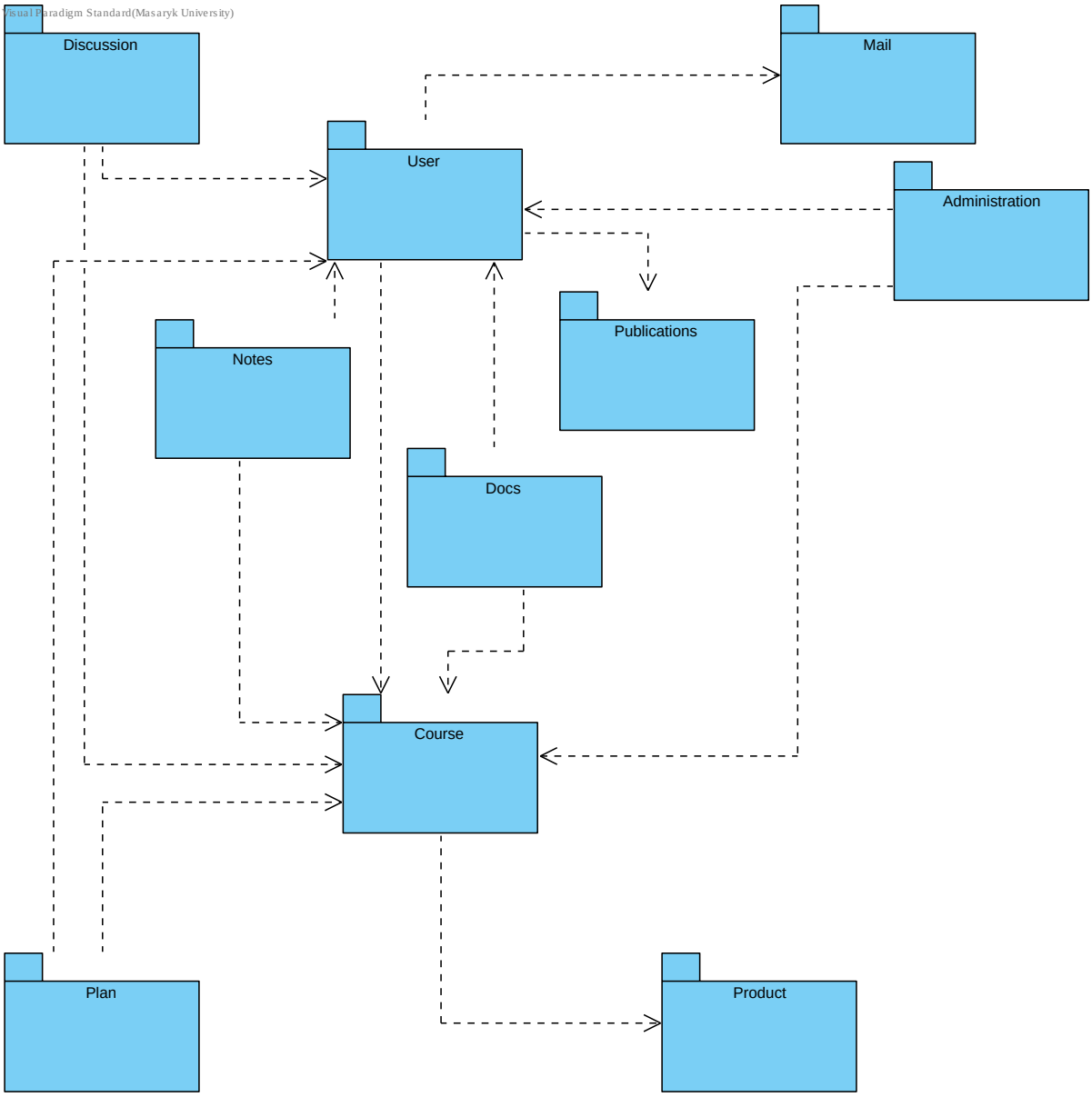
Summary

Name	Description
ITeacher	
IStudent	
Mail	
Discussion	
User	

INail	
IGroup	
IPublication	
IApplicant	
Publications	
IUser	
Notes	
Docs	
IDoc	
INote	
Course	
Administration	
IProduct	
ICourse	
Product	
Plan	

Package Diagram

Package Diagram1



Name	Value
Name	Package Diagram1
Show Information Item Option	2

Summary

Name	Description
Discussion	
Mail	
User	
Administration	
Publications	

Notes	
Docs	
Course	
Plan	
Product	