

# **IS MU - PV167 Project**

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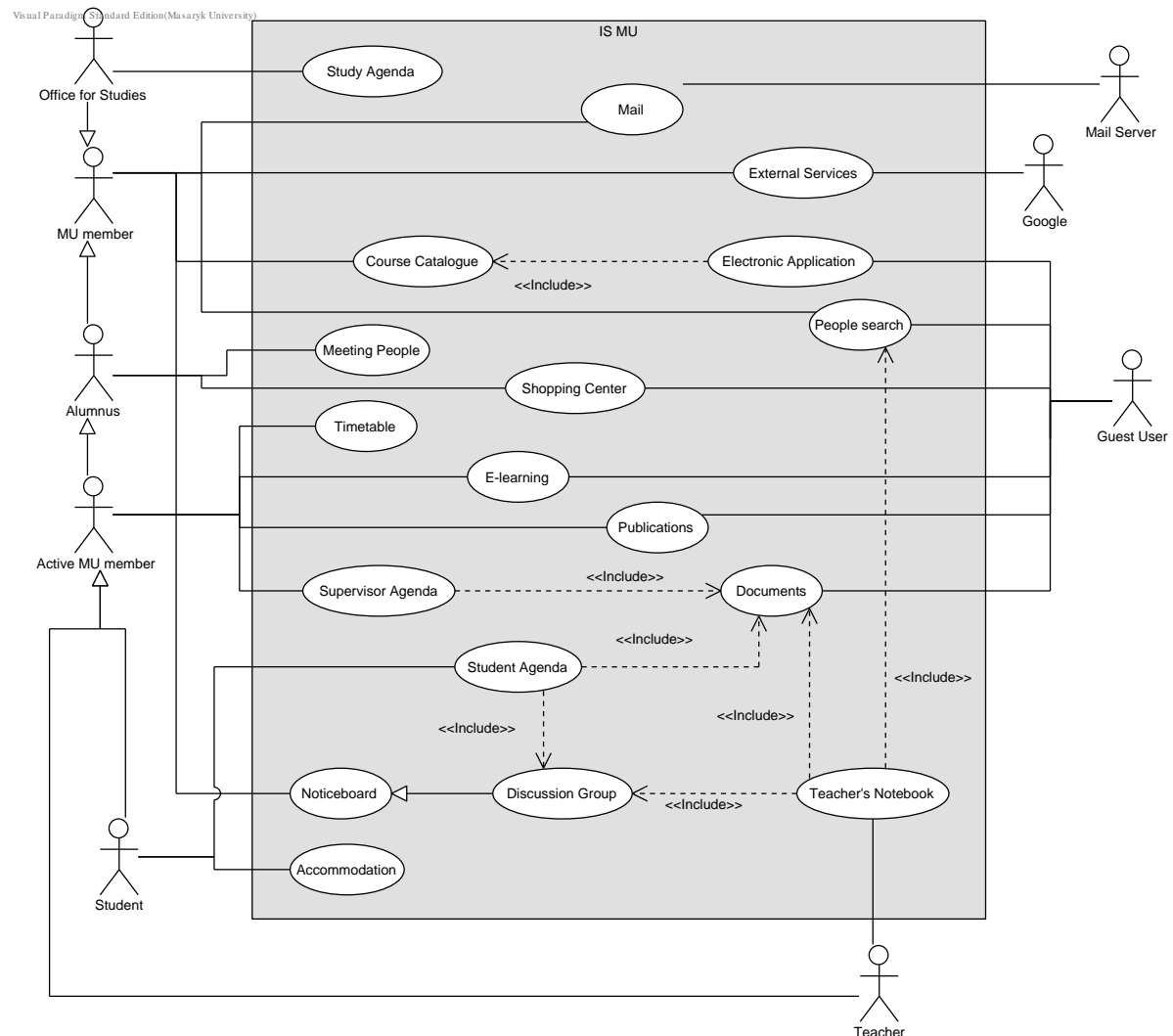
Faculty of Informatics  
Dávid Lupták, Martin Styk

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# Use Case Diagram





## Overview



## Summary

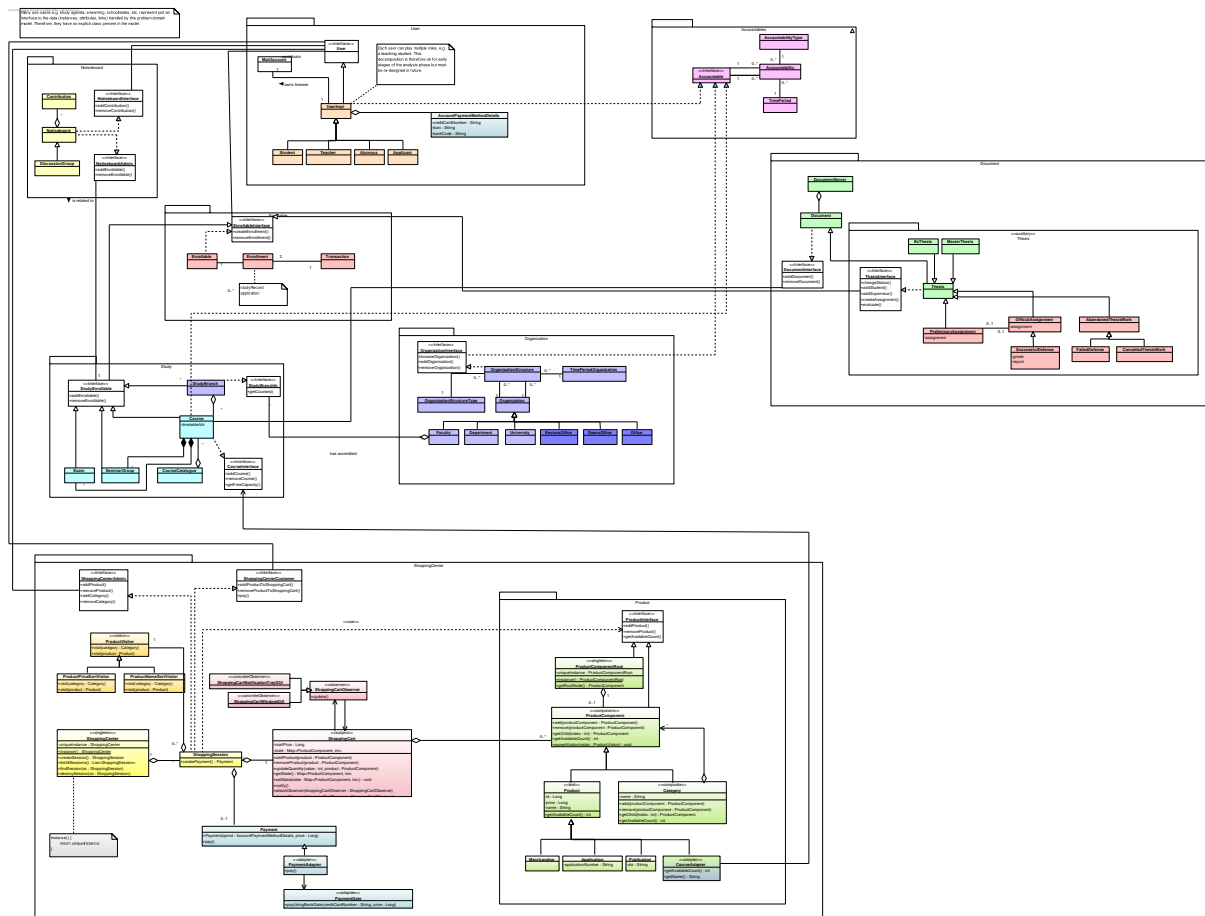
| Name               | Description  |
|--------------------|--|
| Office for Studies | Employee of the office for studies.  |
| MU member          |  |
| Alumnus            | Ex-student, e.g. a past student with no active study at MU.  |
| Active MU member   | User with active relationship with MU, e.g. 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.  |
|  Electronic Application | UC allows non-authenticated users in IS MU to create, manage and submit applications to the university. For already submitted applications it is possible to check the status of the application.   |
|  Shopping Center        | UC provides a way of purchasing products, services and activities offered by Masaryk University. Items can be searched by categories and purchased via various payment modes.   |
|  Accommodation          | UC allows management of accommodation in dormitory. It provides choice of dormitory, room and bed, and all of the administrative tasks related to it.   |
|  E-learning             | UC allows to access e-learning system integrated with IS MU. Users can access study materials and ROPOT exercises. Users with elevated privileges can also modify, add or delete content of e-learning materials.   |
|  Meeting People         | UC allows to stay in touch with mates from university, even after graduation. It includes many tools to achieve this, e.g. My friends, Groups, Cloud of Interests, etc.   |
|  External Services      | UC allows to use services from external providers like Google. Users are able to use Google services in association with their IS MU account.   |
|  Discussion Group       | UC provides space for discussions. Users can add their post and read, rate and reply to posts of others. Discussion groups and threads categorization is available and often related to course of study field.  |
|  Noticeboard          | UC provides access to important news. Users with elevated privileges are able to manage this news, others are able to read it. News is shown at main page in case it is related to the user.  |
|  Documents            | UC allows access to documents hosted on IS MU servers. Document server contains directives, reports, administration stuff and so on. It is used for storing official and personal documents as well.  |
|  Course Catalogue     | UC allows to search and obtain information about all courses. Searching can be performed upon given criteria. Users with elevated privileges are able to manage courses.  |
|  Timetable            | UC allows users to access their timetable, any public timetables or academic calendar. Timetable is available in different formats and supports previewing of changes.  |
|  Student Agenda       | UC allows to perform tasks specific for students. It contains access to documents and study materials of courses in which student is enrolled, enrolling in courses, choosing seminar groups, reserve a slot in exam, look for study results in notebook and so on. |
|  Publications         | UC provides access to publications related to IS MU. Publications can be searched and in case they are free also downloaded.  |
|  Supervisor Agenda    | UC allows to perform tasks related to supervisor. It mainly includes managing topic list, theses coordination, approving and handling tasks of supervised theses.   |
|  Teacher's Notebook   | UC allows to manage information related to teachers. It contains work with courses and enrolled students, their attendance, exams and grades.   |

|   |   |
|---|---|
|  Study Agenda  | UC allows management of study agenda. It includes access to information about studies of students, course details, managing study fields, managing absences, etc. |
|  People search | UC provides a possibility to search IS MU users by their name or surname. Advanced search options are also available.   |
|  Mail          | UC allows users to communicate with mail server. It provides common e-mail functionality like send or receive e-mail messages via mail.muni.cz domain.            |
|  IS MU         | IS MU refers to Masaryk University Information System. This use case model represents the top-level overview to the most important modules of IS MU.              |



## Class Diagram

































# Problem Domain Model



## Summary

| Name                        | Description |
|-----------------------------|-------------|
| User                        |             |
| Accountables                |             |
| AccountabilityType          |             |
| User                        |             |
| Noticeboard                 |             |
| MailAccount                 |             |
| Accountability              |             |
| Accountable                 |             |
| NoticeboardInterface        |             |
| Contribution                |             |
| TimePeriod                  |             |
| UserImpl                    |             |
| AccountPaymentMethodDetails |             |
| Noticeboard                 |             |
| Student                     |             |

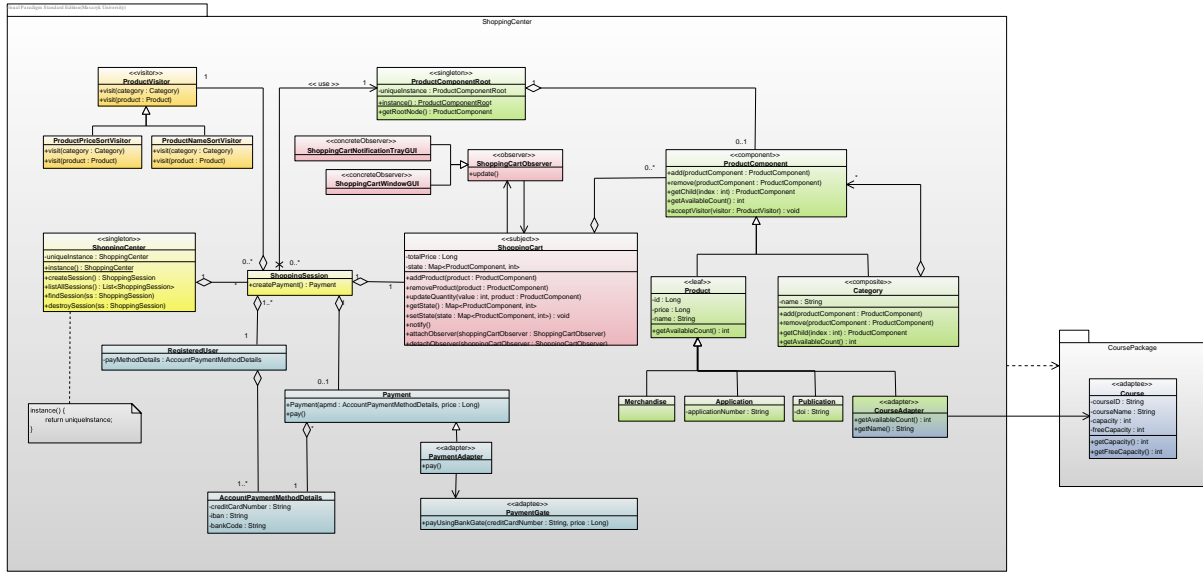
|   |  |
|---|--|
|  Teacher                     |  |
|  Alumnus                     |  |
|  Applicant                   |  |
|  Document                    |  |
|  NoticeboardAdmin            |  |
|  DiscussionGroup             |  |
|  DocumentServer              |  |
|  Enrollable                  |  |
|  Document                    |  |
|  EnrollableInterface         |  |
|  Thesis                      |  |
|  BcThesis                    |  |
|  MasterThesis                |  |
|  Enrollable                  |  |
|  Enrollment                  |  |
|  Transaction                 |  |
|  DocumentInterface           |  |
|  ThesisInterface             |  |
|  Thesis                    |  |
|  OfficialAssignment        |  |
|  AbandonedThesisWork       |  |
|  Organization              |  |
|  PreliminaryAssignment     |  |
|  OrganizationInterface     |  |
|  SuccessfulDefense         |  |
|  FailedDefense             |  |
|  CancelledThesisWork       |  |
|  Study                     |  |
|  OrganizationStructure     |  |
|  TimePeriodOrganization    |  |
|  StudyBranchInterface      |  |
|  StudyEnrollable           |  |
|  StudyBranch               |  |
|  OrganizationStructureType |  |
|  Organization              |  |
|  Course                    |  |
|  Faculty                   |  |
|  Department                |  |
|  University                |  |
|  RectorsOffice             |  |
|  DeansOffice               |  |
|  Office                    |  |
|  CourseInterface           |  |

|   |   |
|---|---|
|  Exam                            |   |
|  SeminarGroup                    |   |
|  CourseCatalogue                 |   |
|  ShoppingCenter                  |   |
|  ShoppingCenterAdmin             |   |
|  ShoppingCenterCustomer          |   |
|  Product                         |   |
|  ProductInterface                |   |
|  ProductVisitor                  |   |
|  ProductComponentRoot            |   |
|  ProductPriceSortVisitor         |   |
|  ProductNameSortVisitor          |   |
|  ShoppingCartNotificationTrayGUI |   |
|  ShoppingCartObserver            |   |
|  ShoppingCartWindowGUI           |   |
|  ProductComponent                |   |
|  ShoppingCenter                  |   |
|  ShoppingCart                    |   |
|  ShoppingSession               |   |
|  Product                       |   |
|  Category                      |   |
|  Payment                       |   |
|  PaymentAdapter                |   |
|  Merchandise                   |   |
|  Application                   |   |
|  Publication                   |   |
|  CourseAdapter                 |   |
|  PaymentGate                   |   |
|  N/A                           | Many use cases e.g. study agenda, e-learning, schoolmates, etc. represent just an interface to the data (instances, attributes, links) handled by this problem domain model. Therefore, they have no explicit class present in the model. |
|  N/A                           | Each user can play multiple roles, e.g. a teaching student. This decomposition is therefore ok for early stages of the analysis phase but must be re-designed in future.  |
|  N/A                           | studyRecord<br>application  |
|  N/A                           | instance() {<br>return uniqueInstance;<br>}   |





























# Class Diagram

## ShoppingCenter



## Summary

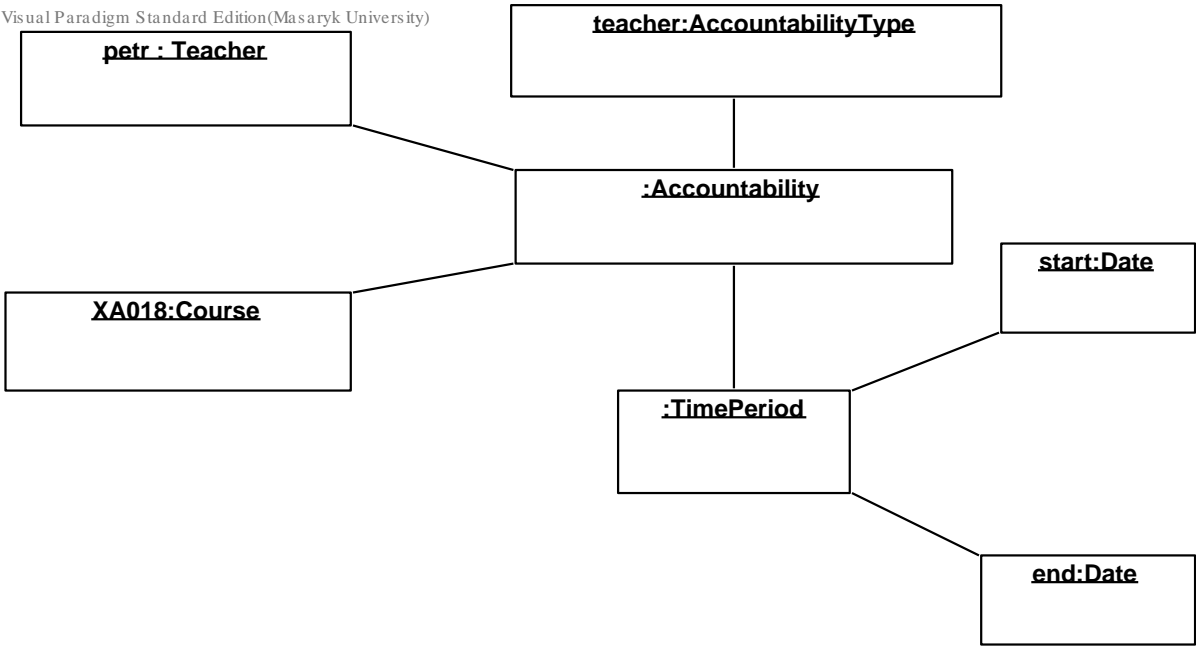
| Name  | Description |
|---|-------------|
|  ShoppingCenter                  |             |
|  ProductVisitor                  |             |
|  ProductComponentRoot            |             |
|  ProductPriceSortVisitor         |             |
|  ProductNameSortVisitor          |             |
|  ShoppingCartNotificationTrayGUI |             |
|  ShoppingCartObserver            |             |
|  ProductComponent                |             |
|  ShoppingCartWindowGUI           |             |
|  ShoppingCenter                  |             |
|  ShoppingCart                    |             |
|  ShoppingSession                 |             |
|  Product                         |             |
|  Category                        |             |
|  CoursePackage                   |             |
|  RegisteredUser                  |             |
|  Course                          |             |
|  Payment                         |             |
|  Merchandise                     |             |
|  Application                     |             |
|  Publication                     |             |
|  CourseAdapter                   |             |
|  PaymentAdapter                  |             |

|   |  |
|---|--|
|  AccountPaymentMethodDetails |  |
|  PaymentGate                 |  |
|  N/A                         | <pre>instance() {<br/>    return uniqueInstance;<br/>}</pre> |

Object Diagram

# Accountability

Visual Paradigm Standard Edition(Masaryk University)



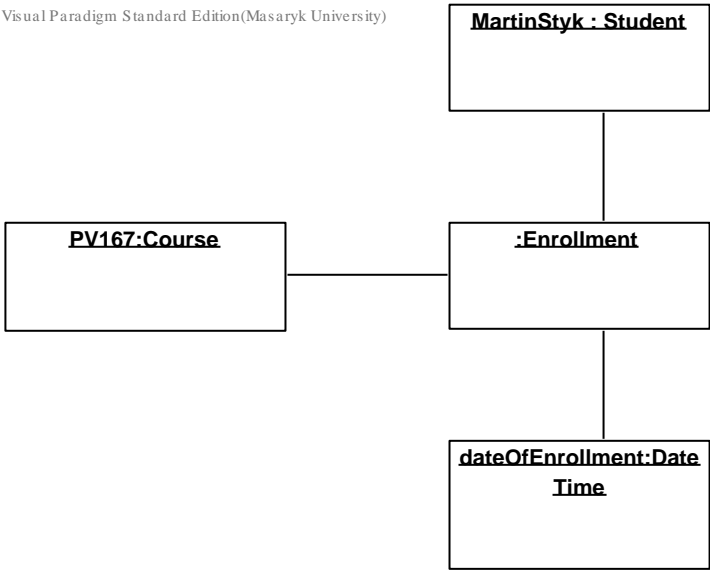
## Summary

| Name                       | Description |
|----------------------------|-------------|
| teacher:AccountabilityType |             |
| petr                       |             |
| :Accountability            |             |
| start:Date                 |             |
| XA018:Course               |             |
| :TimePeriod                |             |
| end:Date                   |             |





Object Diagram

# Enrollment

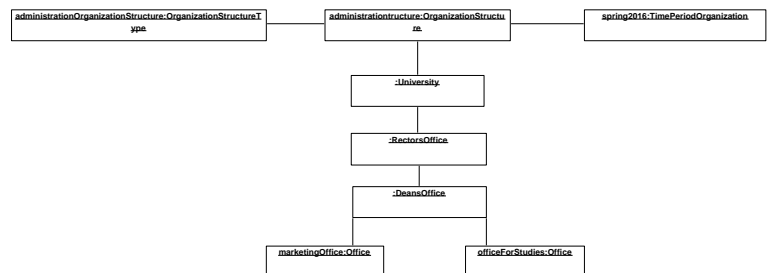
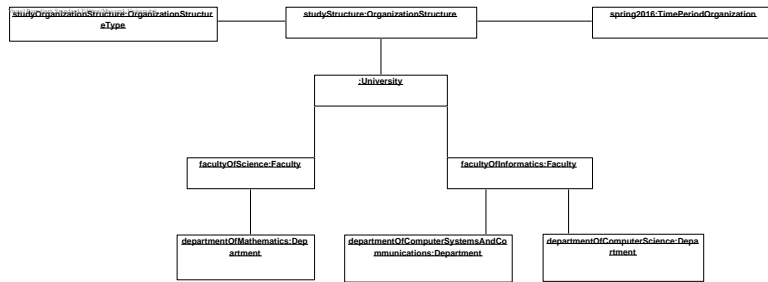
Visual Paradigm Standard Edition(Masaryk University)



## Summary

| Name  | Description |
|---|-------------|
|  MartinStyk                |             |
|  PV167:Course              |             |
|  .Enrollment               |             |
|  dateOfEnrollment:DateTime |             |

# Object Diagram Structure



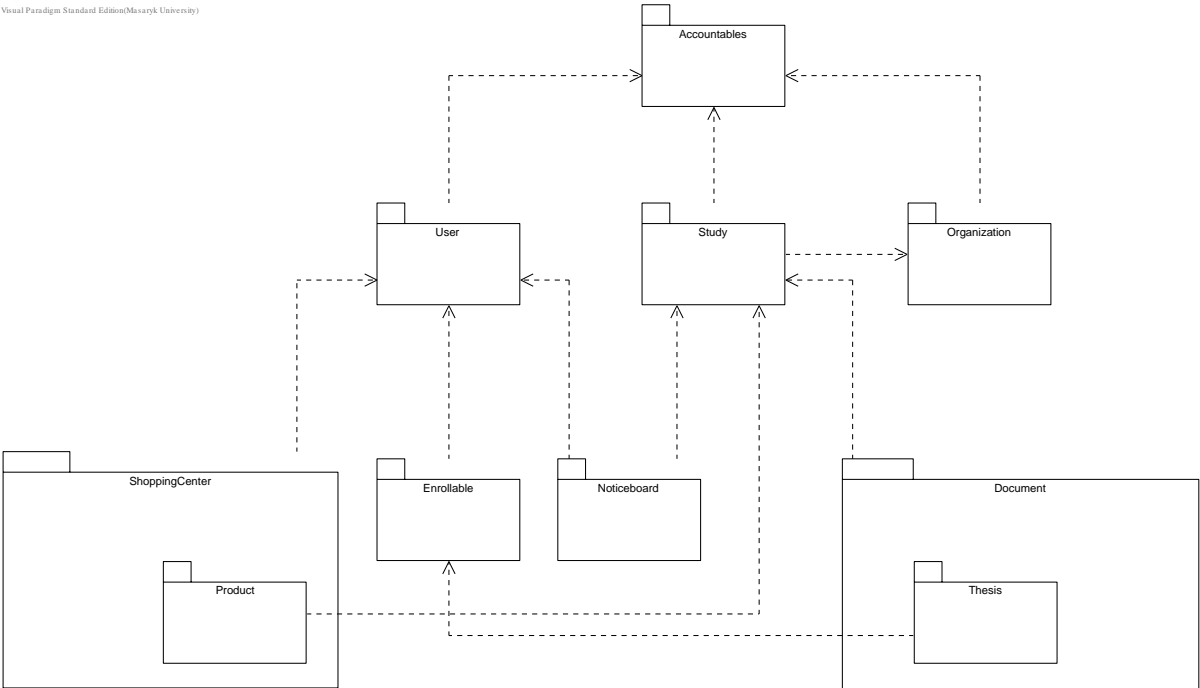
## Summary

| Name  | Description |
|---|-------------|
| studyOrganizationStructure:OrganizationStructureType          |             |
| studyStructure:OrganizationStructure                          |             |
| spring2016:TimePeriodOrganization                             |             |
| :University   |             |
| facultyOfScience:Faculty                                      |             |
| facultyOfInformatics:Faculty                                  |             |
| departmentOfComputerScience:Department                        |             |
| departmentOfMathematics:Department                            |             |
| departmentOfComputerSystemsAndCommunications:Department       |             |
| administrationOrganizationStructure:OrganizationStructureType |             |
| administrationstructure:OrganizationStructure                 |             |
| spring2016:TimePeriodOrganization                             |             |
| :University   |             |
| :RectorsOffice  |             |
| :DeansOffice  |             |
| marketingOffice:Office  |             |
| officeForStudies:Office                                       |             |











Package Diagram

Package Diagram

Visual Paradigm Standard Edition(Masaryk University)

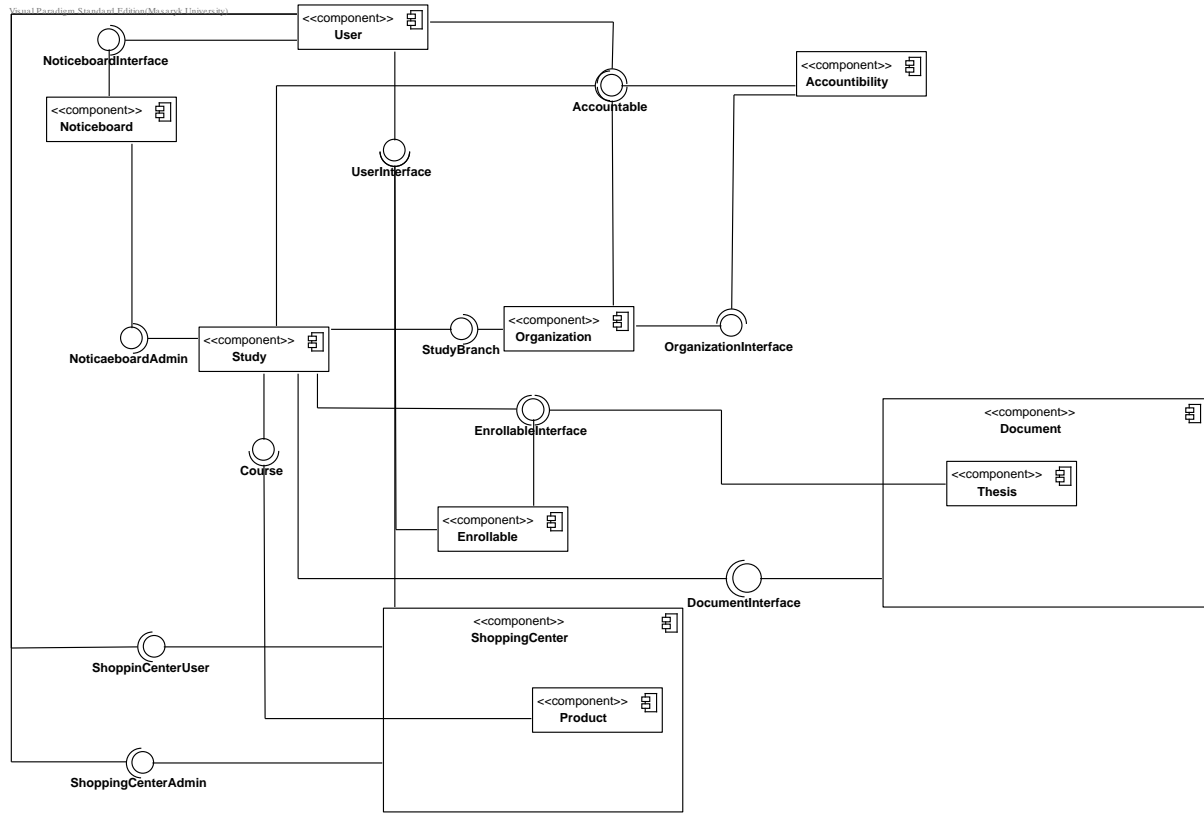


Summary


















| Name   | Description |
|--|-------------|
|  Accountables |             |
|  User         |             |
|  Study        |             |
|  Organization |             |
|  ShoppingCart |             |
|  Enrollable   |             |
|  Noticeboard  |             |
|  Document     |             |
|  Product      |             |
|  Thesis       |             |





## Component Diagram

# Component Diagram



## Summary

| Name  | Description |
|---|-------------|
|  User                  |             |
|  NoticeboardInterface  |             |
|  Accountability        |             |
|  Accountable           |             |
|  Noticeboard           |             |
|  UserInterface         |             |
|  Organization          |             |
|  OrganizationInterface |             |
|  StudyBranch           |             |
|  NoticaeboardAdmin     |             |
|  Study                 |             |
|  EnrollibleInterface   |             |
|  Document              |             |
|  Course                |             |
|  Thesis                |             |
|  Enrollible            |             |
|  DocumentInterface     |             |

|   |  |
|---|--|
|  ShoppingCenter      |  |
|  ShoppinCenterUser   |  |
|  Product             |  |
|  ShoppingCenterAdmin |  |