

*Innovation and Knowledge Management towards
eStudent Information System – iKnow*

*Security and interface to other internal
systems*

**Anastas Misev
Ana Madevska Bogdanova
University “Sts. Cyril & Methodius”
Fac. of Nat. Sciences &
Mathematics
Institute of Informatics**

Objective

- The general objective of these modules is to fit the new system into the already present (or the future developed) infrastructure.
- Integrating these functionalities will add value to the proposed system, covering the whole set of university daily operations.

General Overview

- The system is intended to be used by the students; academic and administrative staff at all the levels
 - University, faculty, department
 - all the resource providers outside of the University (libraries, etc).

Existing System(s)

- At the moment, there is no AA infrastructure established in Republic of Macedonia. There are smaller infrastructures at some of the Universities (for example UGD Stip), but they are local infrastructures.
 - The current infrastructures have no international connectivity and visibility. The only example of international visibility is the eduroam infrastructure (which is in the process of establishment at UKIM – on 2 locations so far).
- There is no connection in the Universities in Macedonia from a University library to courses developed in the curricula of the faculties.
- Most universities already have in place LMS and finance management systems. Some of them have different forms of presence and/or access control systems.

Elements

- Authentication and authorization infrastructure
- Interface to presence and access control
- Interface to the e-mail system
- Interface to learning management systems
- Interface to e-Library systems
- Interface to finance systems

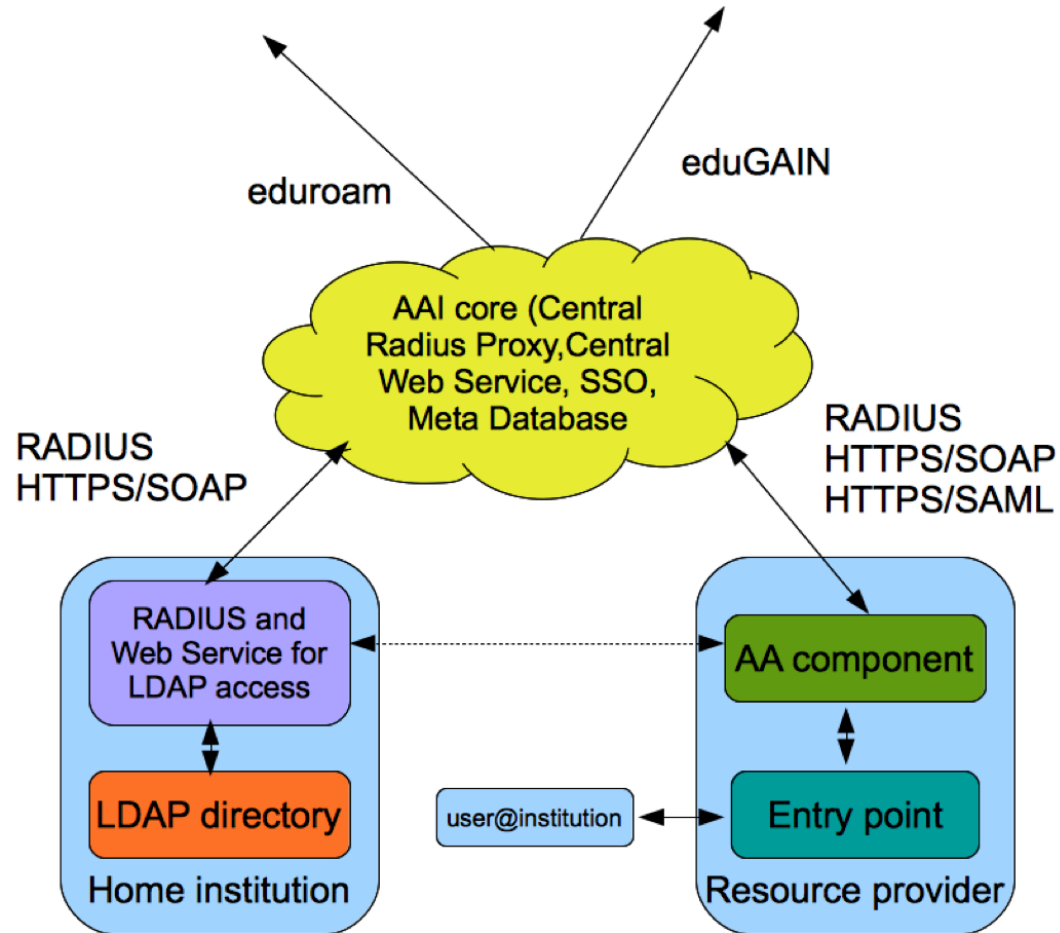
AAI

- Enable unique identification
- Enable administration of personal files
- Provide authentication of each user by its home institution
- Provide authorization for university resources and services
- Send accounting reports to university management
- Provide broader solution (applicable within and outside the project framework)
- Be based on open standards (RADIUS, LDAP, ...)

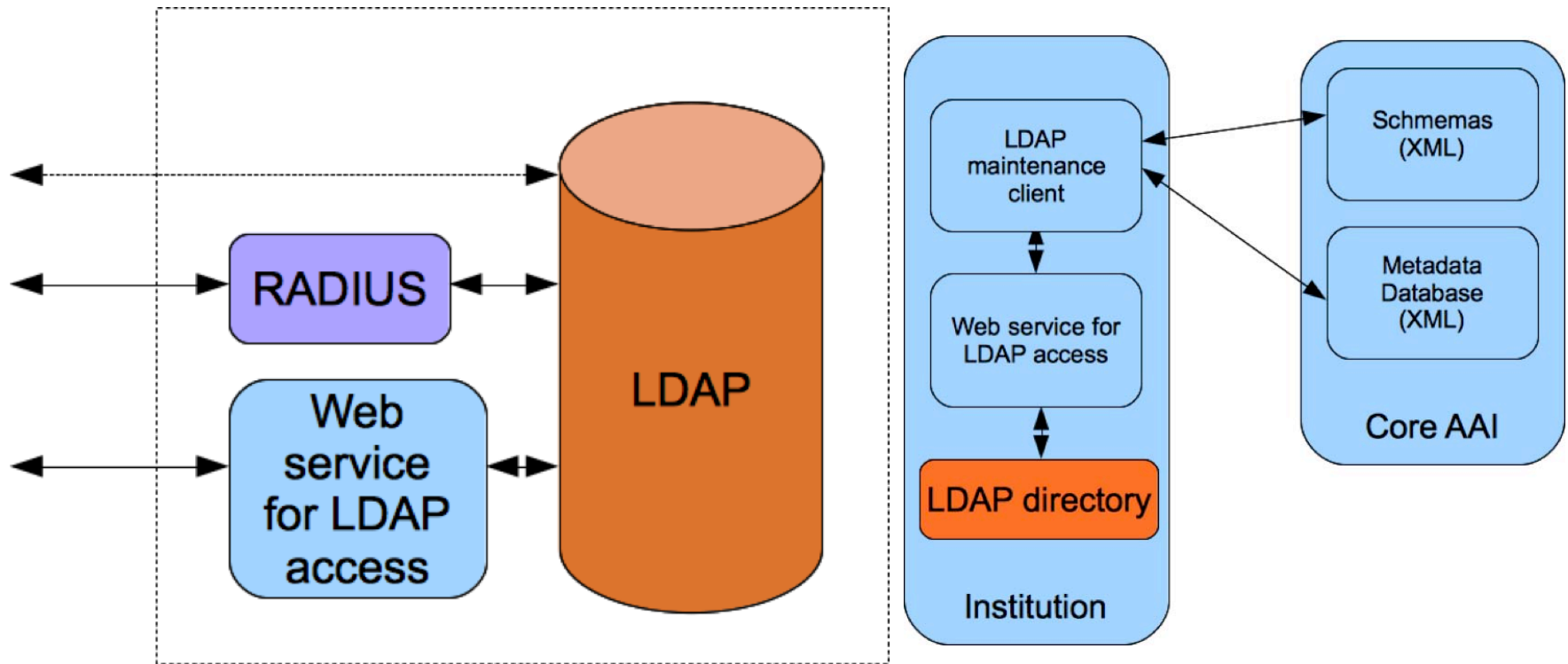
Core AAI elements and architecture

- The role of core AAI elements is to provide
 - simple, secure and reliable operation of the authentication and authorization process.
- The process is initiated by the user requiring access to some resource that is conformant with the underlying AAI standard.
- The resource could be network, web applications, other network based applications, etc.
- The core AA components will then contact the AA components at the home institutions that perform the authentication, but also provide other information from the electronic identity of the user that will be used by the resource providers in the authorization process.

AAI-Core systems



AAI-Home institution



Presence and access control

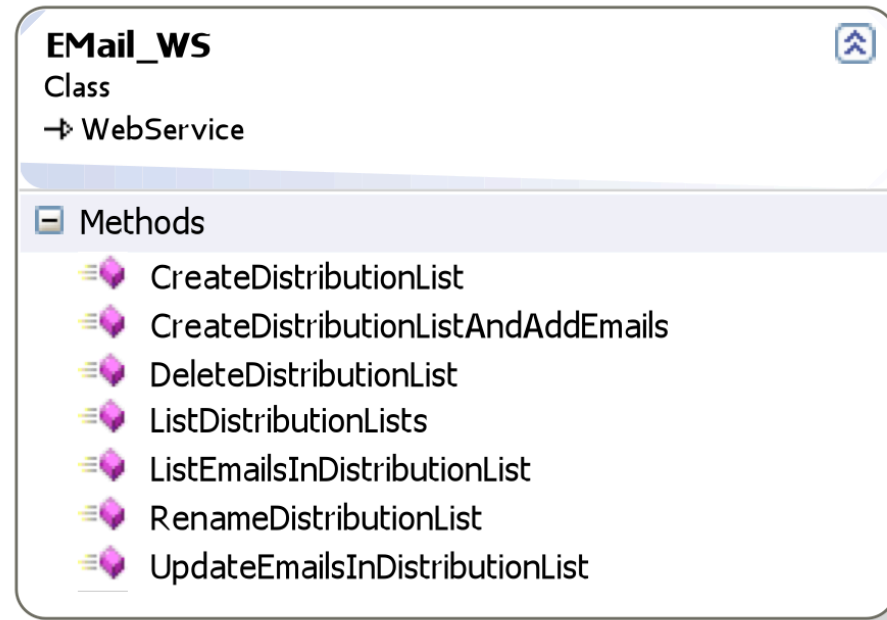
- Interface the existing and future presence and access control systems
- Provide presence logs to iKnow systems
- Require confirmation for resources access from iKnow systems

Interface to e-mail and communication systems

- This section describes the functionality between iKnow and the internal student email system. It is assumed that
 - Upon enrollment a student will be given an email address from a university subdomain e.g. student.university.edu.mk, or
 - A student will register a private email for all email notifications from the University

Interface to e-mail and communication systems

Functionality to add, modify and delete email distribution lists, and to add, modify or remove email addresses to distribution lists.

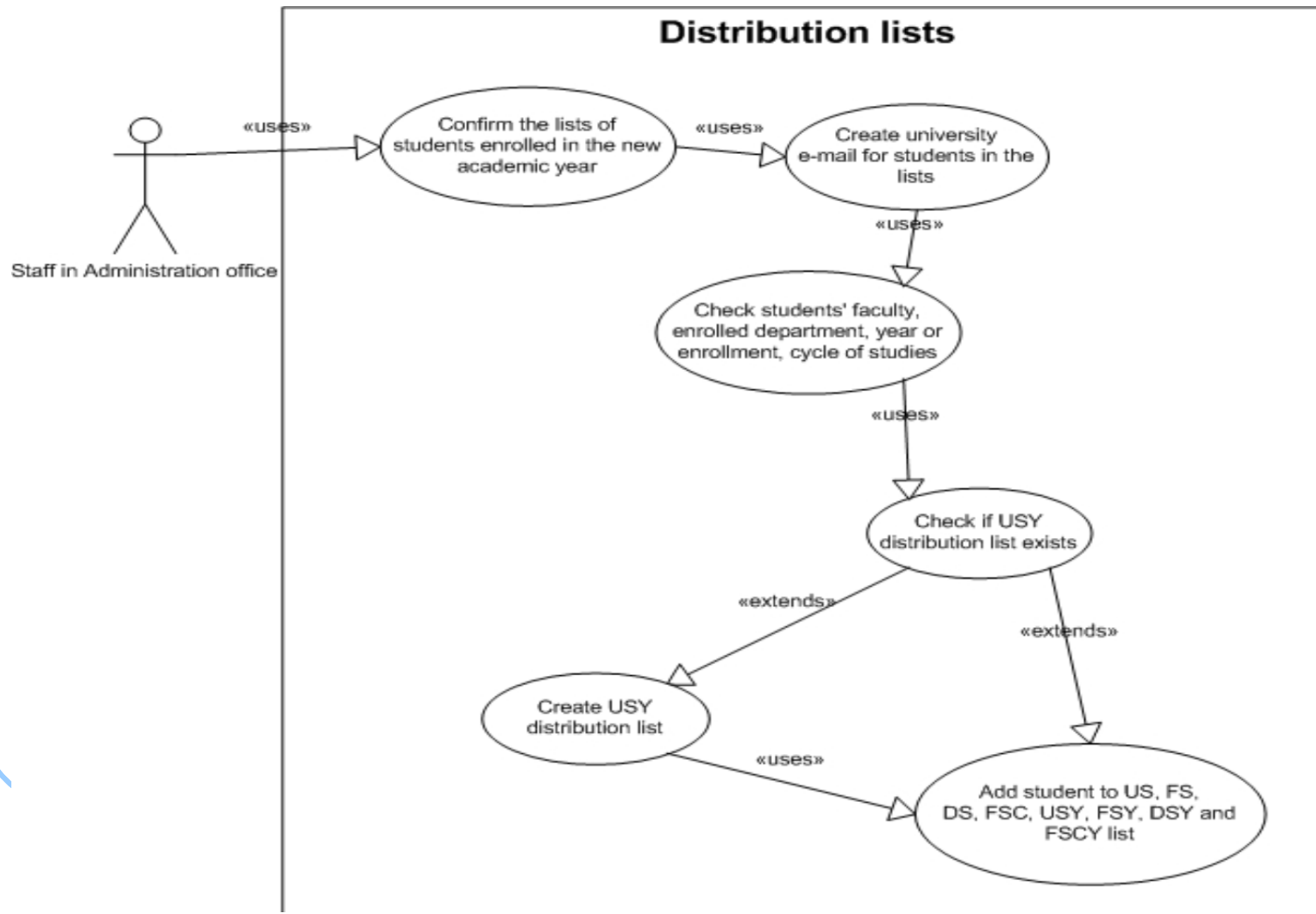


EMail_WS
Class
→ Webservice

Methods

- CreateDistributionList
- CreateDistributionListAndAddEmails
- DeleteDistributionList
- ListDistributionLists
- ListEmailsInDistributionList
- RenameDistributionList
- UpdateEmailsInDistributionList

Use cases e-mail (1)



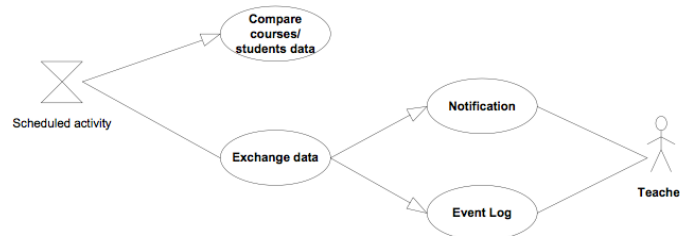
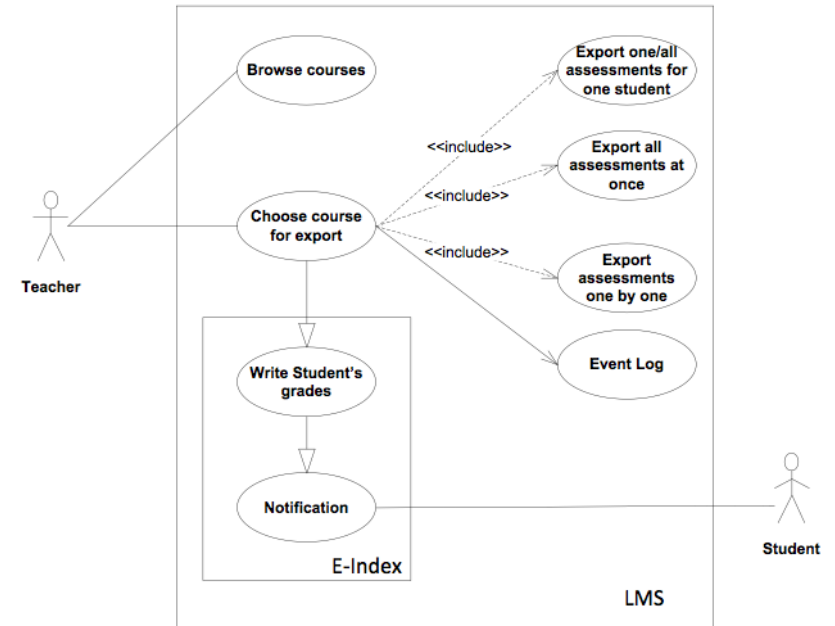
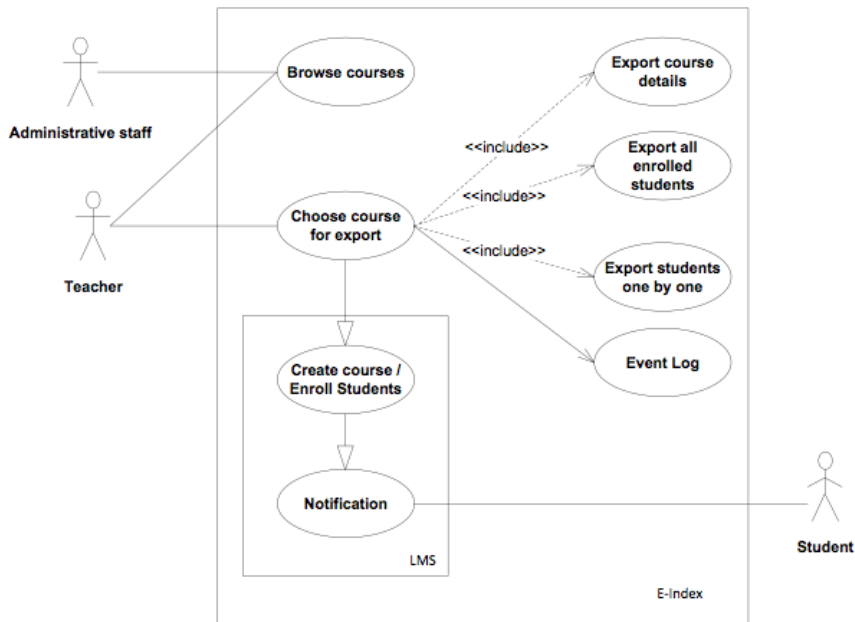
Distribution lists

- All University students (US) e.g. Students
- All faculty students (FS) e.g. ComputerScience
- All department students (DS) e.g. SoftwareEng
- All students in a cycle of studies in a faculty (FSC) e.g. ComputerScienceFirstCycle
- All University students enrolled in a given school year (USY) e.g. Students2010

Interface to learning management systems

- View all the details for the student's activities.
- Opportunity for electronic signatures
- Opportunity for reporting examinations
- Create the statistical reports.
- Enable the candidates to take proactive role in the process of e-learning
- Using of the data of enrolled students
- Provide the candidates with updates of the current status
- Provides opportunities for electronic materials and their organization by courses, study programs
- Provides communication between students and professors

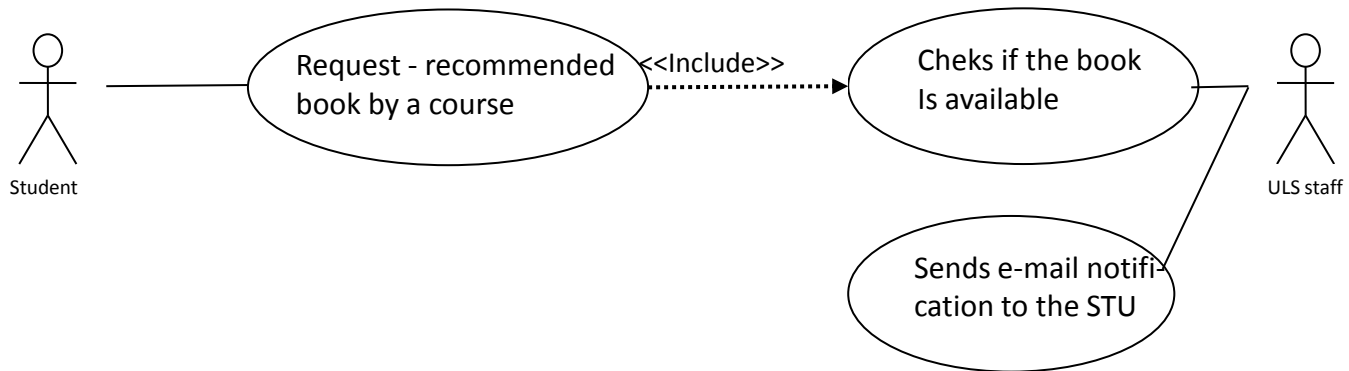
Use cases LMS



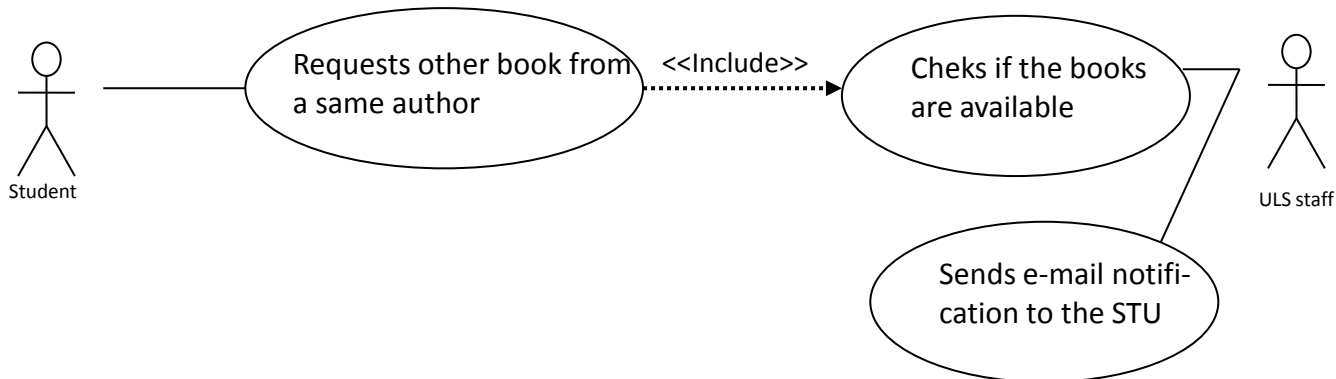
Interface to e-Library systems

- Control the library resources
- Better communication and knowledge-transfer
- Enhance the accessibility to the teaching materials
- Provide the priority in using library resources

Use cases – Library: LMS to ULS

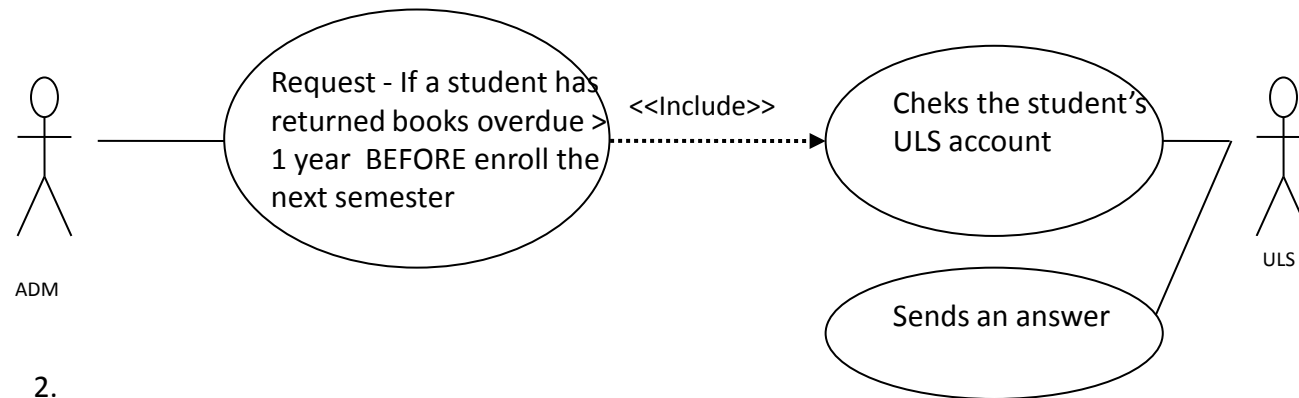


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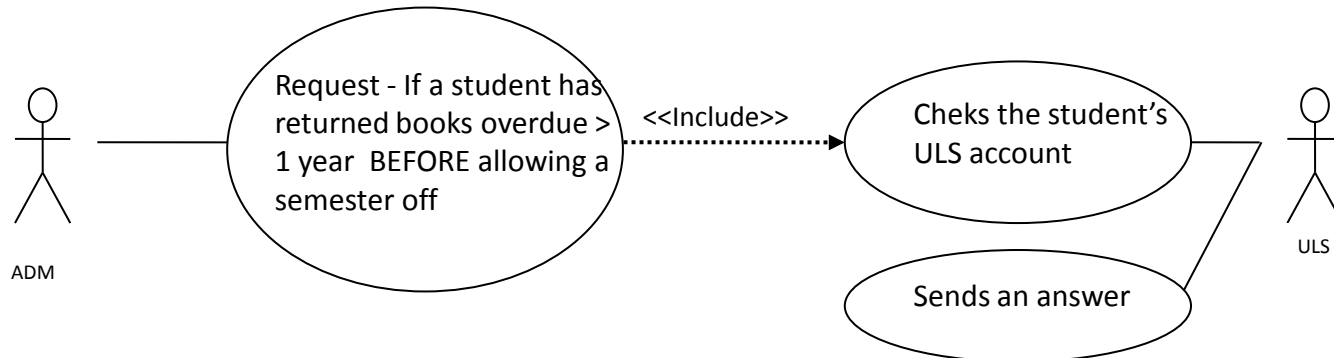


Use cases – Library: CORE → ULS

1.

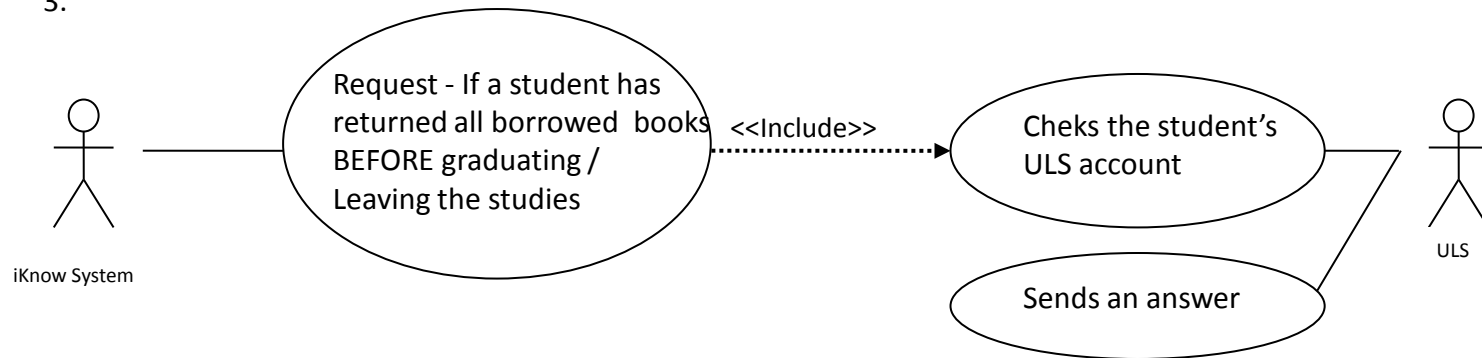


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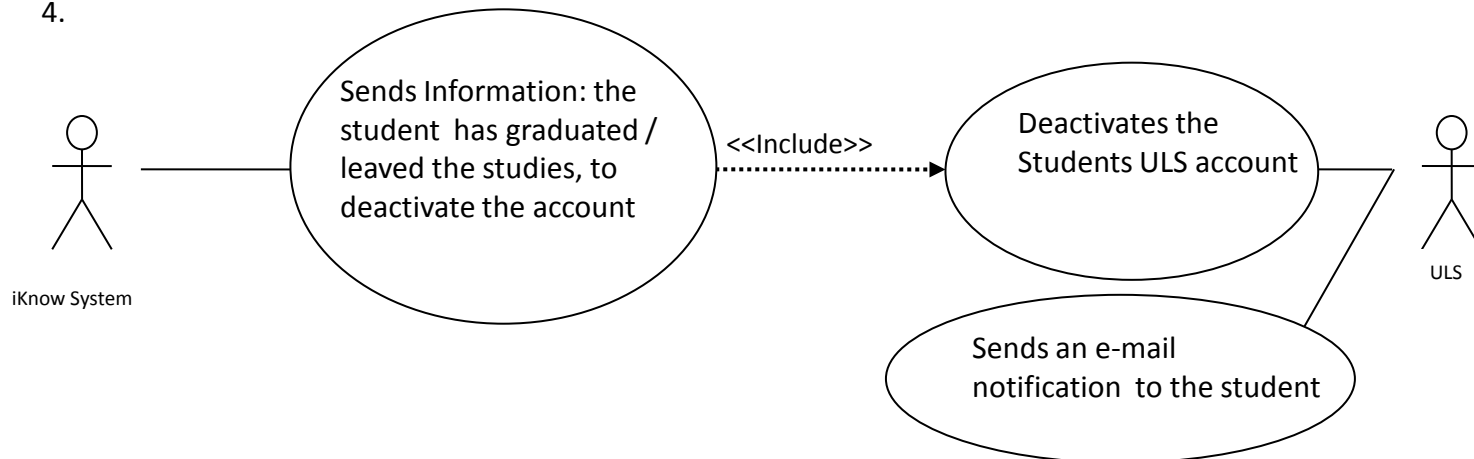


Use cases – Library: CORE → ULS

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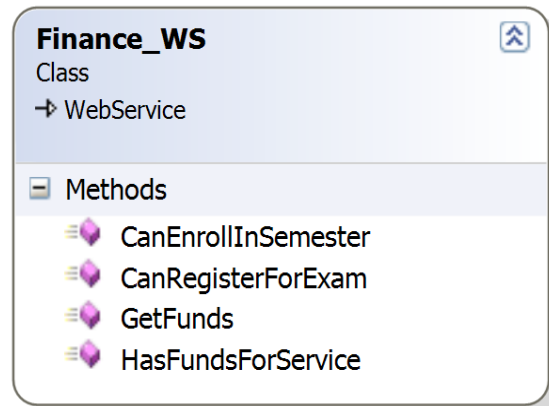


4.



Interface to financial systems

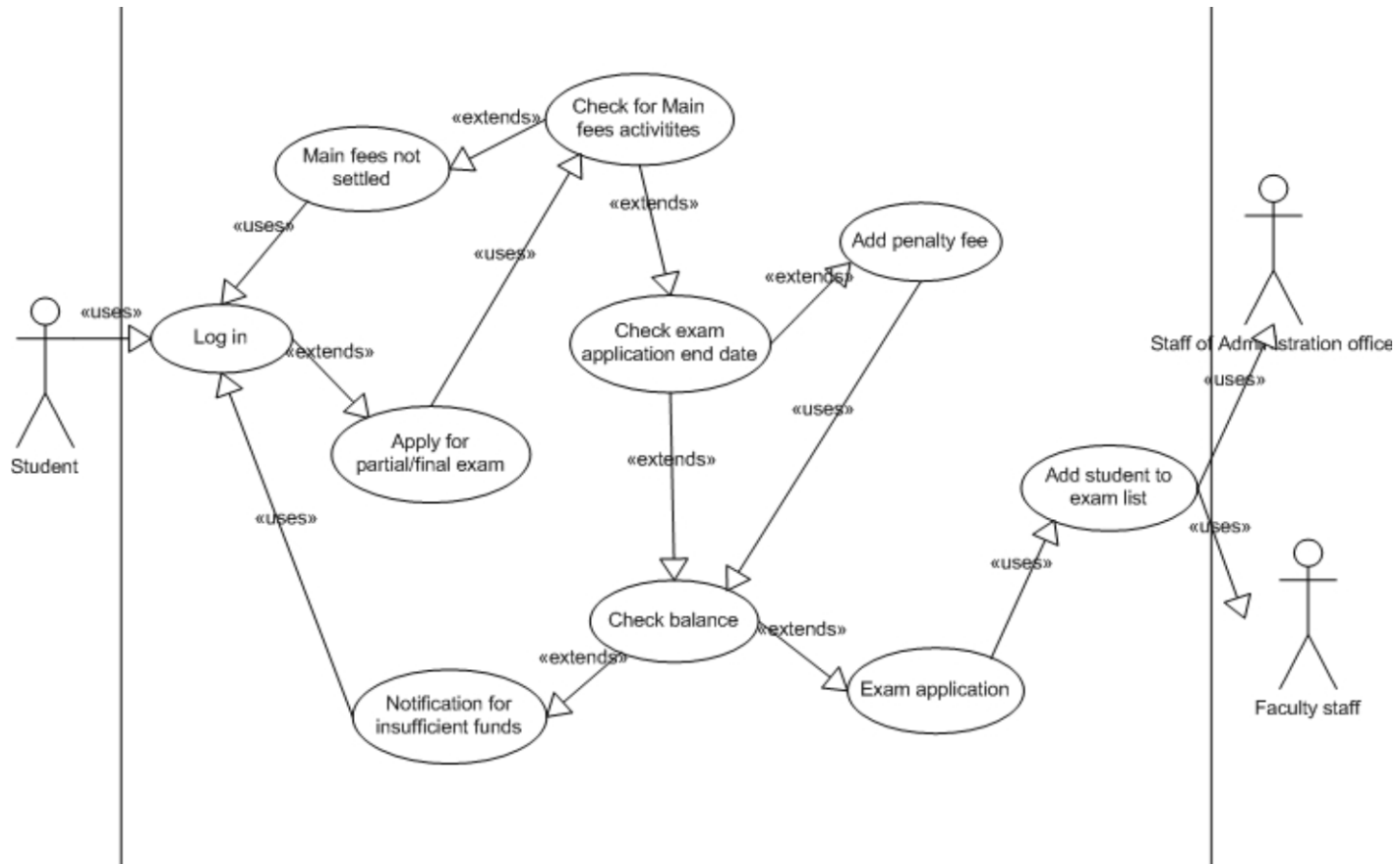
- Data exchange on the payment of the fees
 - enquire if a student has enough funds for a service e.g. to register for an exam, to enroll in a semester etc. , and whether the service should be rejected or accepted.



Interface to financial systems

- We foresee 2 models for the clearance of the payments:
 - pre-paid, where the students deposits some amount up-front, and then each new obligation is subtracted from that amount
 - post-paid, where for each activity, new financial obligation is generated (invoice), and the financial department is queried if this specific obligation is paid.

Use case - financial



Conclusion

- Establish robust AAI system, usable within the project and beyond
- Interface all the existing and future internal systems to acquire the broader perspective
- Lower the administrative effort to maintain the university daily operations