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Team Ludus

Abstract

There is no reason that learning cannot be fun and engaging. In today’s game-saturated world, it’s time for a learning technology that makes learning at a collegiate level enjoyable. This is how the ball gets rolling.

Ludus

Software Design Document, version 1.0

Table of Contents

[Revision History 3](#_Toc353815415)

[1 Introduction 4](#_Toc353815416)

[1.1 System Overview 4](#_Toc353815417)

[1.2 Supporting Materials 4](#_Toc353815418)

[1.3 Definitions, Acronyms, and Abbreviations 5](#_Toc353815419)

[Documentation and System 5](#_Toc353815420)

[Application Internals 5](#_Toc353815421)

[Application Interface 5](#_Toc353815422)

[Technological 6](#_Toc353815423)

[2 Design Considerations 7](#_Toc353815424)

[2.1 Assumptions 7](#_Toc353815425)

[2.2 Constraints 7](#_Toc353815426)

[2.3 System Environment 7](#_Toc353815427)

[3 Database Diagram 8](#_Toc353815428)

[4 Class Diagrams 9](#_Toc353815429)

[4.1 Courses 9](#_Toc353815430)

[4.2 Faculty 10](#_Toc353815431)

[4.3 Home Page 11](#_Toc353815432)

[4.4 Personal Items 12](#_Toc353815433)

[4.5 Profile 13](#_Toc353815434)

[4.6 Sections 14](#_Toc353815435)

[4.7 Session 15](#_Toc353815436)

[4.8 Student 16](#_Toc353815437)

[4.9 Assignments 17](#_Toc353815438)

[4.10 Badges 18](#_Toc353815439)

[4.11 Calendar 19](#_Toc353815440)

[5 User Interface Screens 20](#_Toc353815441)

[5.1 Login Page 20](#_Toc353815442)

[Home Screen – Calendar View 21](#_Toc353815443)

[Home Screen – List View 22](#_Toc353815444)

[My Profile Screen 23](#_Toc353815445)

[Administrative Screen – View Assignments 24](#_Toc353815446)

## Revision History

|  |  |  |  |
| --- | --- | --- | --- |
| Name | Date | Reason For Changes | Version |
| Initial Draft | April 10, 2012 |  | 0.1 |
| Final Draft | April 15, 2013 |  | 1.0 |

# 1 Introduction

Ludus: Noun (Latin)

1. School

2. Game, Sport, Play

3. Fun

## 1.1 System Overview

This SDD will cover the web application Ludus. The name Ludus was inspired by the book Ready Player One, written by Ernest Cline, published by Random House in August, 2011. In this book, most interaction in the world takes place in an online simulation called the OASIS. The protagonist, Wade Watts, is a student on the virtual world Ludus, a world populated only with schools. The book turns on Wade’s realization that the word Ludus not only means School, but means Sport and Game as well.

For the most part, the students of today grew up with games everywhere. From different gaming platforms, such as Xbox, PlayStation, and the Wii, to mobile device games, like Angry Birds. The feedback loop of playing for reward is a strong one, ingrained in the students of today.

Ludus is a software package written to help make learning at a collegiate level fun. We recognize that students have developed in a gaming environment and rather than fight it, Ludus harnesses this development pattern.

Ludus will encapsulate current philosophies on gamification and integrate them with the appropriate structure required for a proper classroom environment. For administrators and faculty, the process and workflow is little different than those they currently follow. Their primary additional considerations for coursework construction regards the creation of badges and awards.

In modern gaming, the concept of the “power-up” and “badge” prevails. These are small advantages and recognitions that drive the player to further play. While a player of solitaire might not slog through a complete four-pack game of Spider for no reward, they are more likely to if they earn a badge after one win, or after a dozen. The reward feedback loop reinforces the behavior to play.

With Ludus, we integrate the power-up and badge concepts. A student might earn a “Perfect” badge for their first 100% correct quiz, or an “Early Bird” power-up, for submitting an assignment some number of days in advance, which gives them permission to submit an assignment late without penalty. Badges are little points of honor and accomplishment. Additionally, awards can come with Award Points, a virtual currency which can be spent on in-application or real items (like gift cards for the school bookstore).

Ludus will provide a fully integrated education system, with the ability for faculty to create quizzes and examinations, designate, collect, and grade submissions for assignments, and collect and communicate grades with students. Students will be able to use section and personal discussion boards for course networking.

The ultimate goal of Ludus is to have a system where school work is play for students. If school work isn’t work, we encourage students to participate more wholeheartedly in their education.

## 1.2 Supporting Materials

Ludus System Requirements Specification. <http://ludus.azurewebsites.net/Documents/Ludus%20SRS.docx>

<http://gamification.org/wiki/Gamification_of_Education> - A link to gamification.org, a site dedicated to information on the gamification of non-gaming systems.

<https://en.gravatar.com> - A system for designating a “global avatar”, associated with an email address.

<http://twitter.github.com/bootstrap/> - A set of user interface components that give a uniform and modern look and feel.

## 1.3 Definitions, Acronyms, and Abbreviations

### Documentation and System

Ludus – The application being developed.

System – Synonymous with Ludus.

SRS – Software Requirements Specification – A document which outlines the initial, high-level requirements for a software project.

SDD – Software Design Document – A document which outlines design considerations and decisions made during a development effort.

### Application Internals

User – An authorized and registered user of the application. The general and base level of User is a student.

Student – A user who is also an enrollee to one or more Sections at the institution which has licensed the software. This role is granted on a per-session basis.

Faculty – A user who is authorized to administer one or more courses and sections, and of creating assignments. This role is granted on a per-session basis.

Administrator – A user who is authorized to administer institution-wide settings, including the creation of sessions and courses, as well as designating individuals as faculty and students.

Session – A period of time where coursework takes place, usually synonymous with semester or quarter.

Course – A set of subject material taught by faculty.

Section – A subset of students who are enrolled a course at the same time or via the same methodology. A course can have many sections associated with it.

Assignment – A task assigned to enrollees in a section by a faculty member.

Personal Item – A task assigned to a user by themselves.

Award Point – A unit of virtual currency used within the System. They can be granted or earned, and can be spent in an online store.

Badge – An award, configured by a user, which can be earned by another user. These represent certain achievements and statuses in the system. Each badge can be allocated a number of Award Points.

### Application Interface

Home Page – <http://ludus.azurewebsites.net/> - The landing page of the System.

Login Page – A page when a site visitor enters their credentials, or registers for use.

Task Calendar View – A view of a student’s upcoming tasks in calendar format.

Task List View – A view of a user’s upcoming tasks in calendar format.

Profile screen – A view of a user’s personal profile, including biography and badges earned.

Management Screens – Views of internal management data, to be edited by faculty and administrators.

### Technological

GUI – Graphical User Interface

MVC – The Model-View-Controller design pattern, used in the construction of Ludus. Refer to [www.asp.net/mvc](http://www.asp.net/mvc)

Git – The Revision Control System used for development of Ludus. Refer to [www.github.com](http://www.github.com)

CI – Continuous Integration

UML – Unified Modeling Language. Refer to [www.uml.org](http://www.uml.org)

# 2 Design Considerations

## 2.1 Assumptions

The system on which Ludus is being installed meets the constraints noted in section 2.2, and has an active internet connection for download of the installation package.

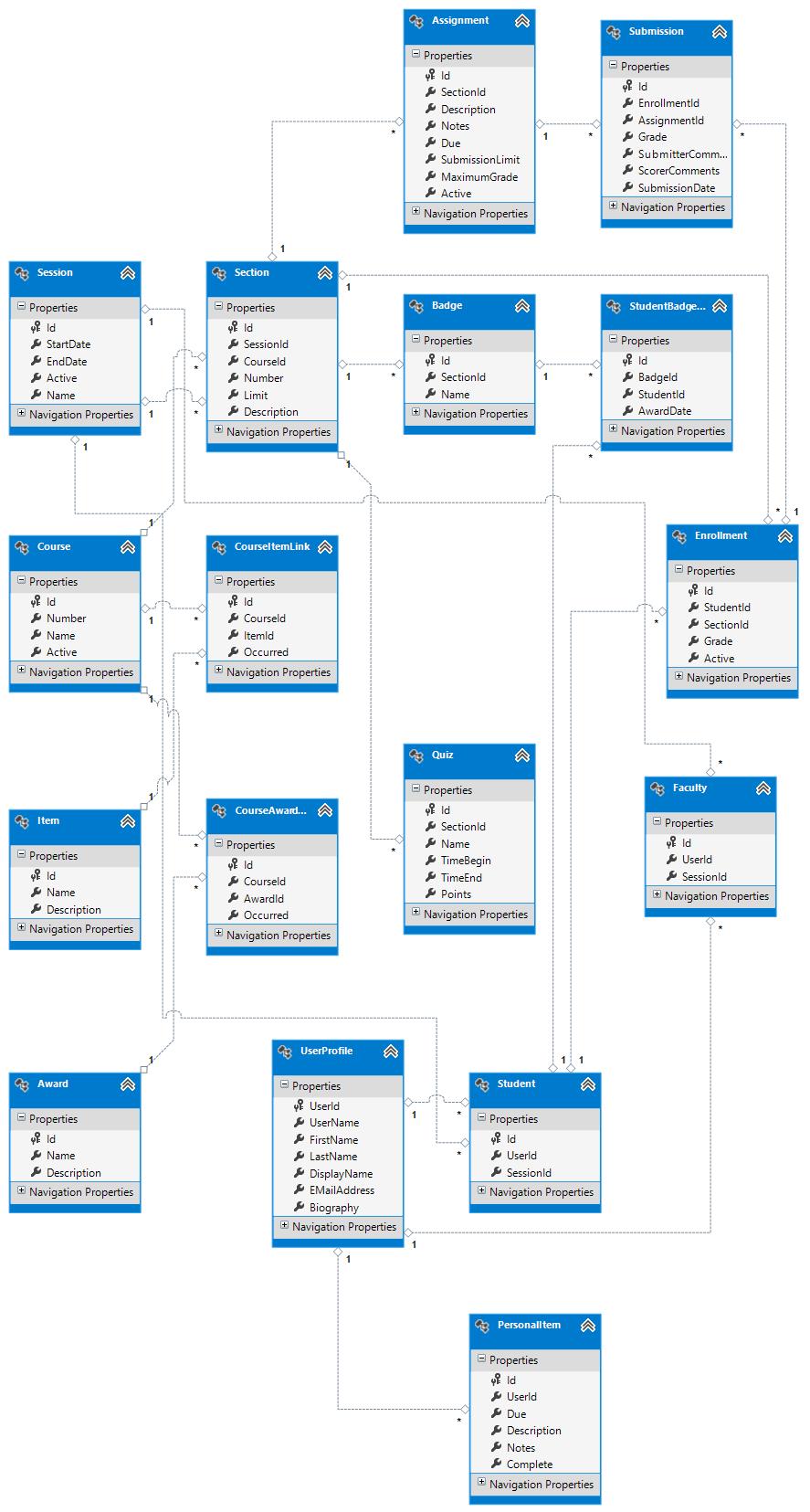
## 2.2 Constraints

* Platform
  + Users must have Internet Browses which support HTML 5 and CSS 3
  + Minimum screen width for Ludus: 1024 pixels
* Operating System
  + Microsoft Windows Server 2008 or above
  + Microsoft IIS 7.5 minimum
  + Microsoft .NET Framework 4.5 or above
  + Database Hosted on SQL Server 2008 or above
  + Ludus can be hosted on the Microsoft Azure Platform, the preferred deployment method

## 2.3 System Environment

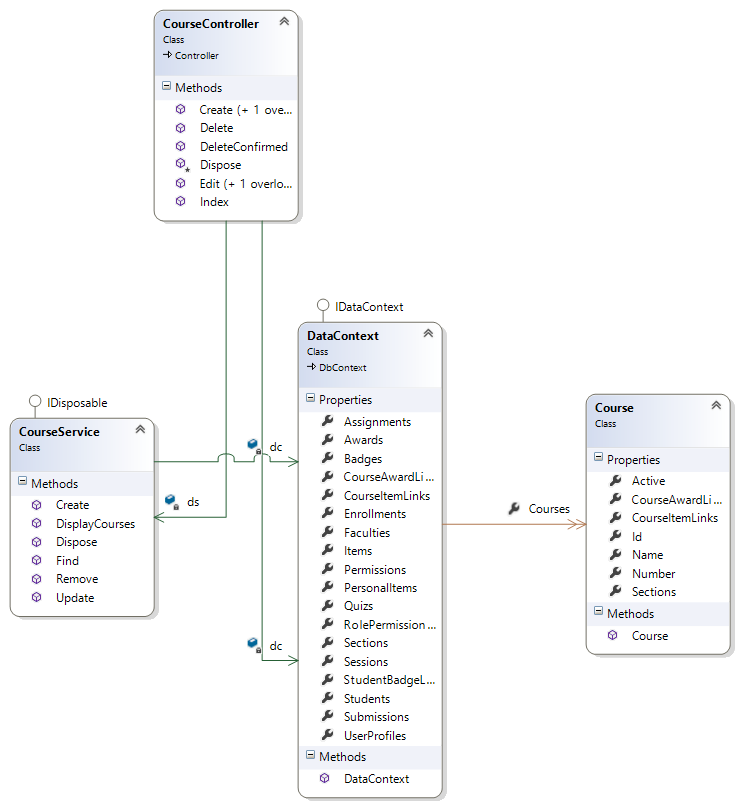
The system runs on a Windows Server environment with IIS 7.5 installed. The system is build using the MVC 4 framework, and is dependent on the client machine allowing the execution of JavaScript.

# 3 Database Diagram

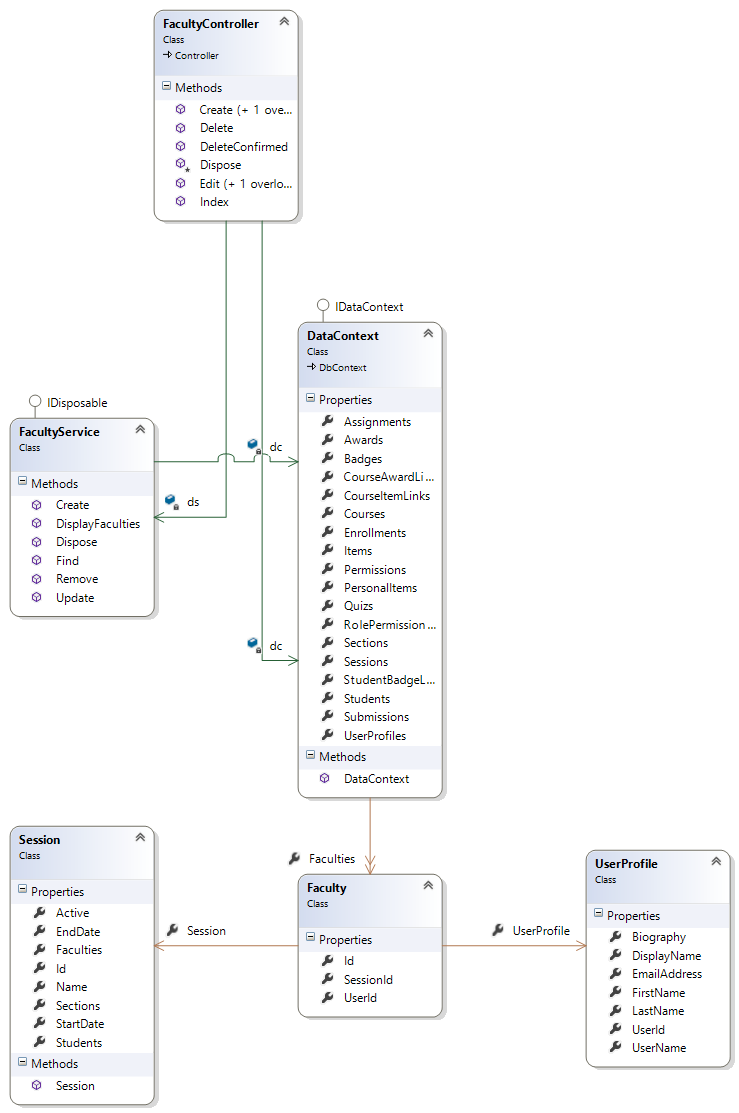


# 4 Class Diagrams

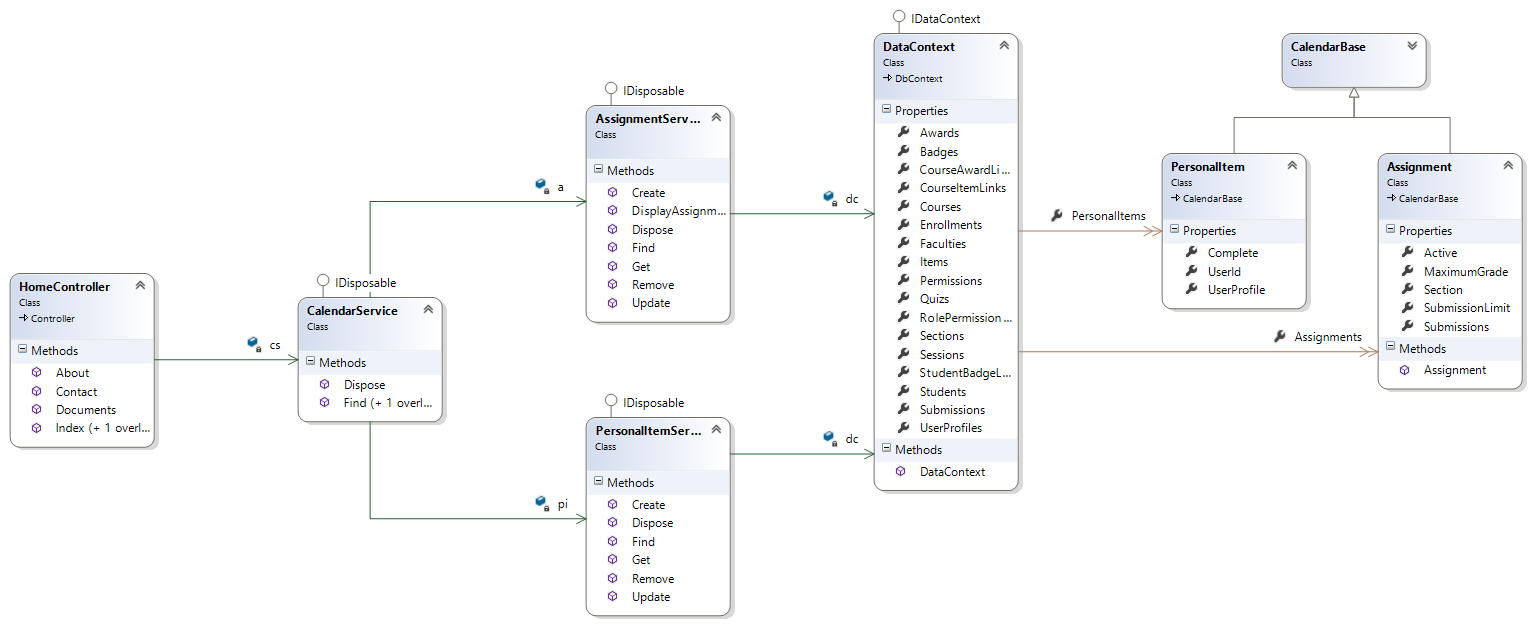
## 4.1 Courses



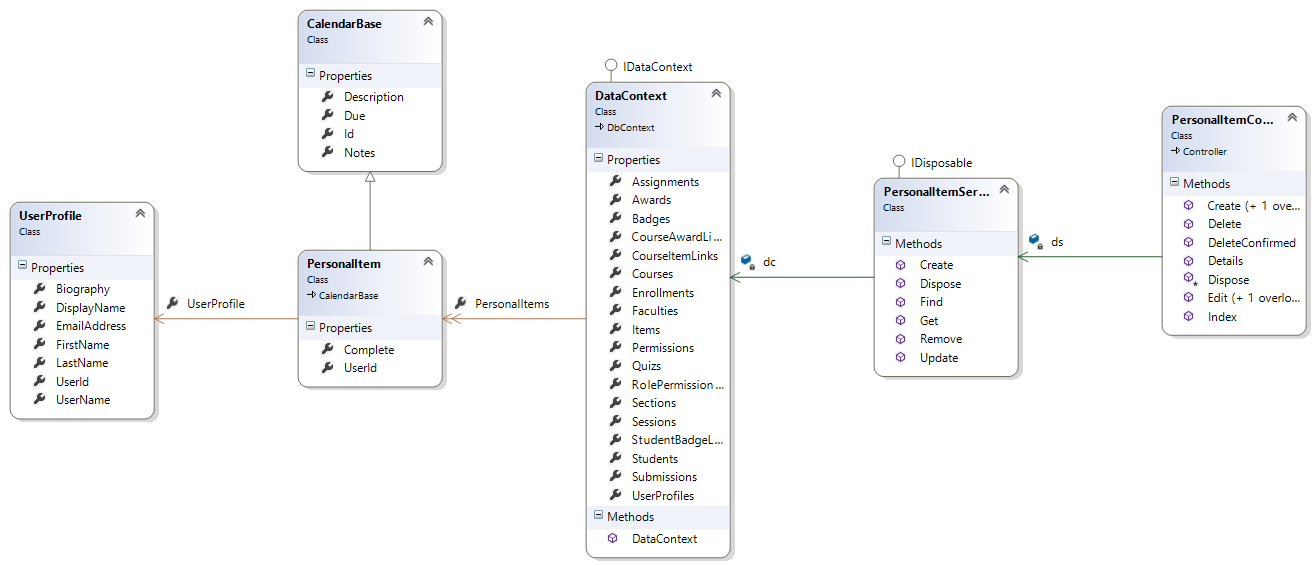
## 4.2 Faculty



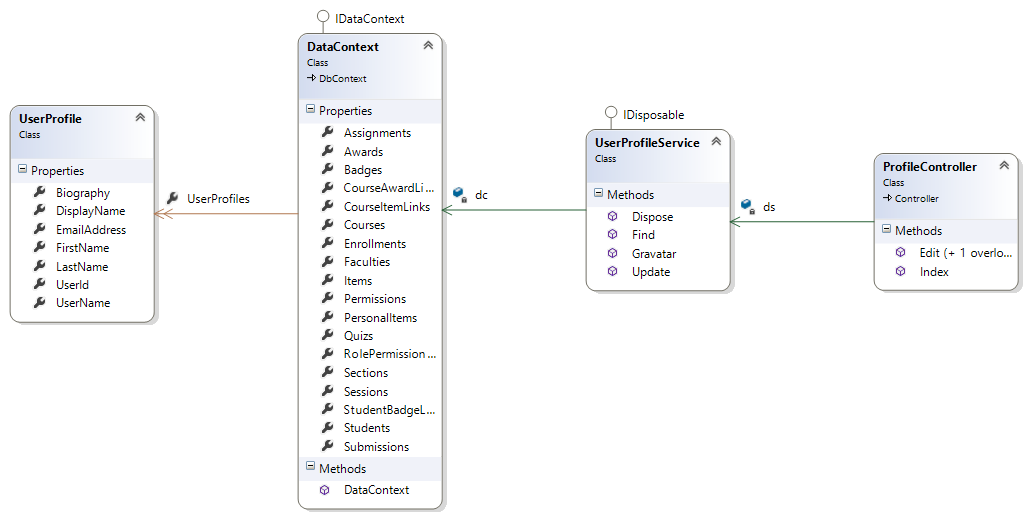
## 4.3 Home Page



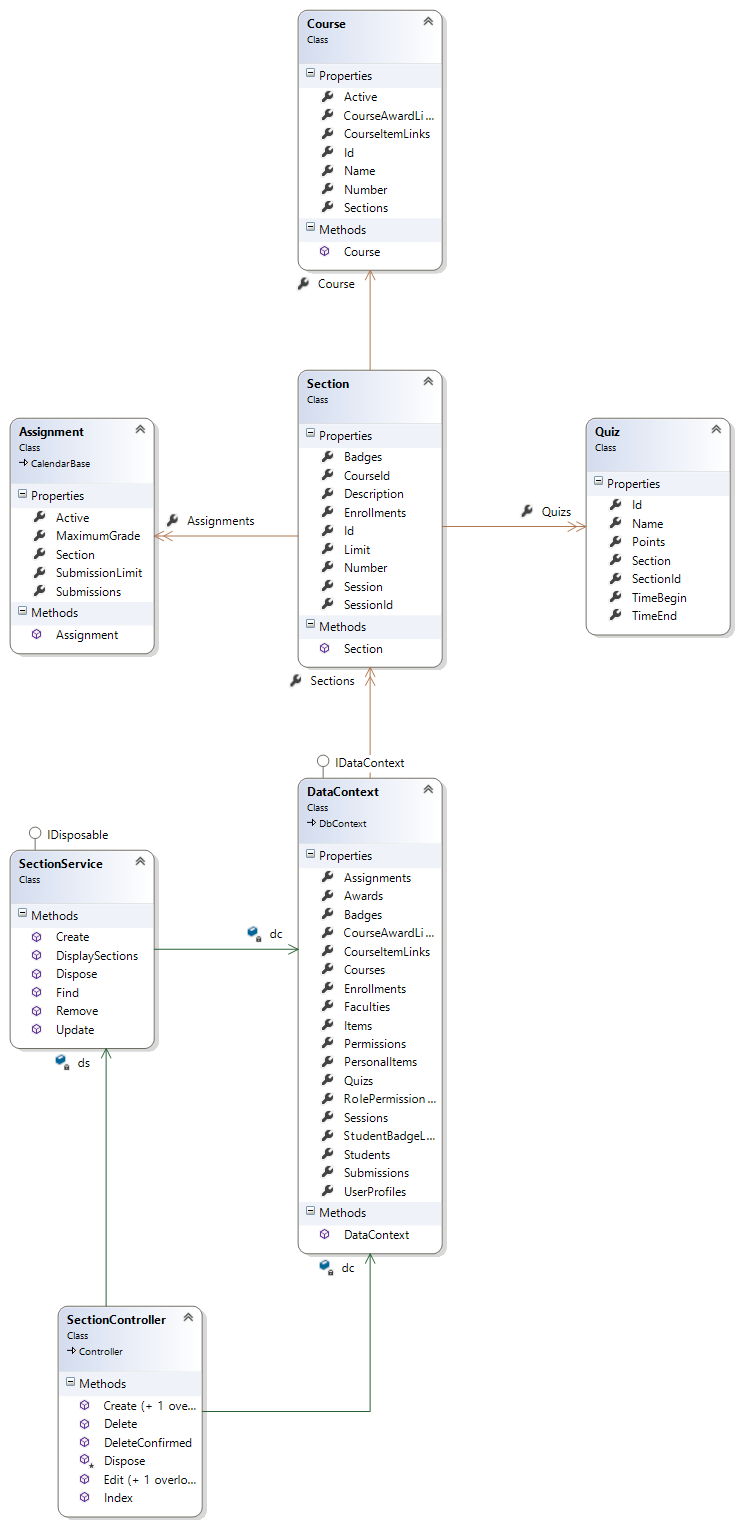
## 4.4 Personal Items



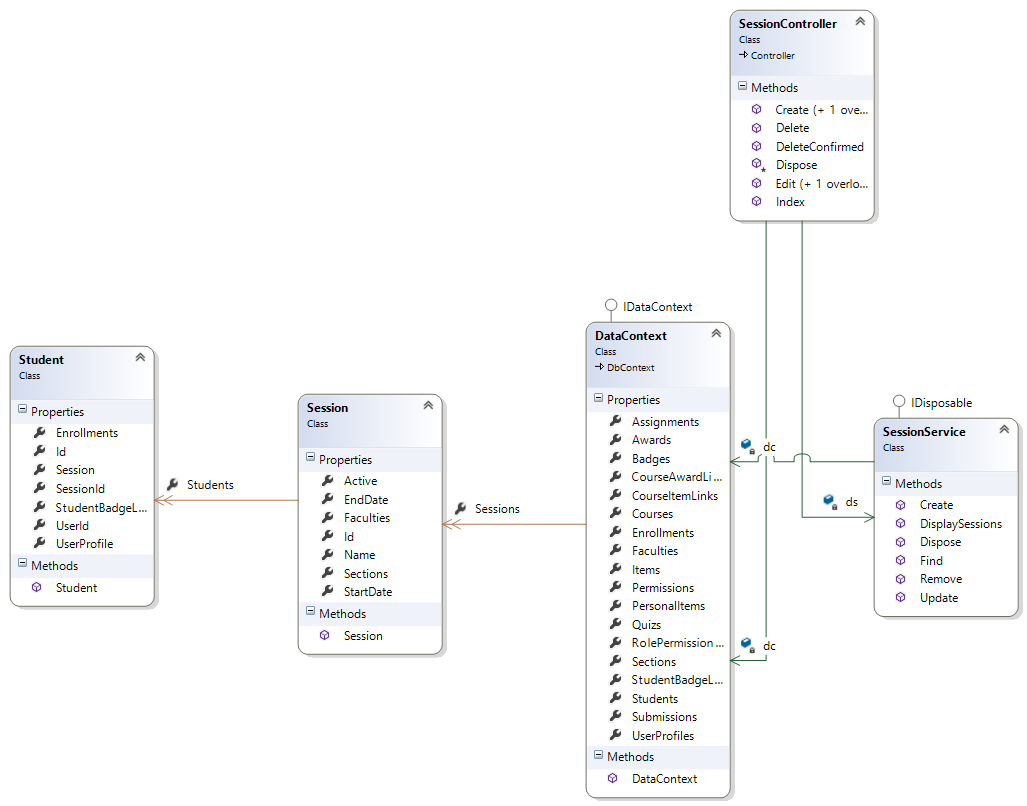
## 4.5 Profile



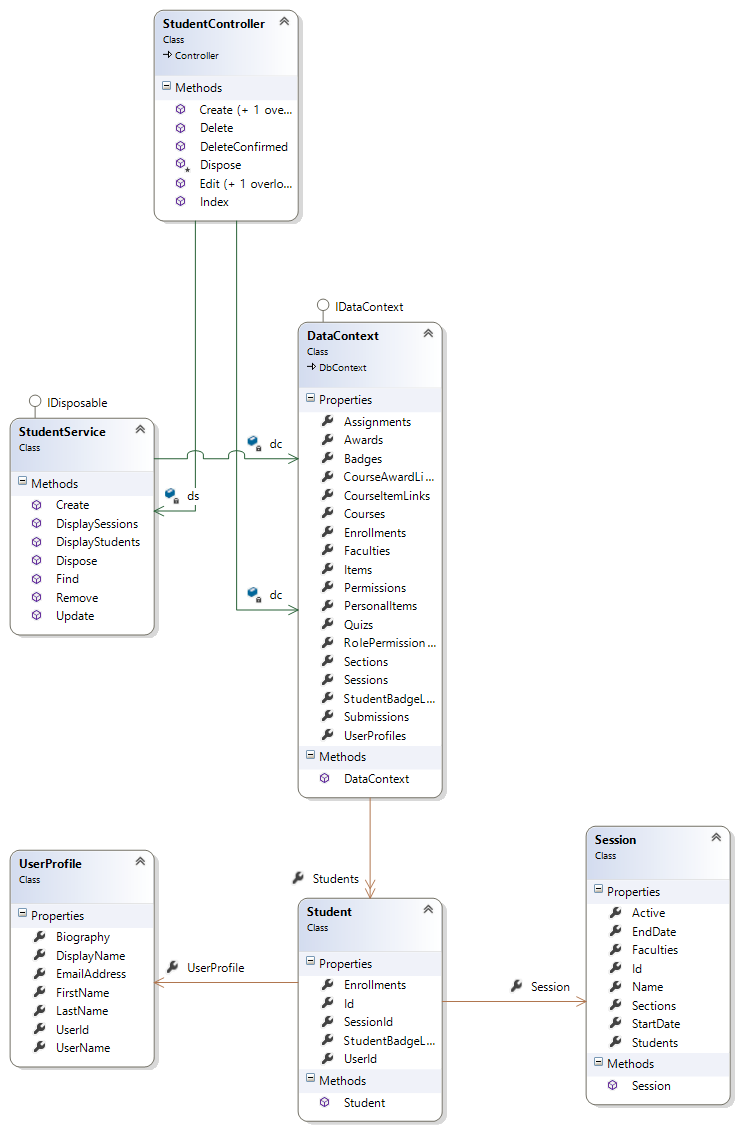
## 4.6 Sections



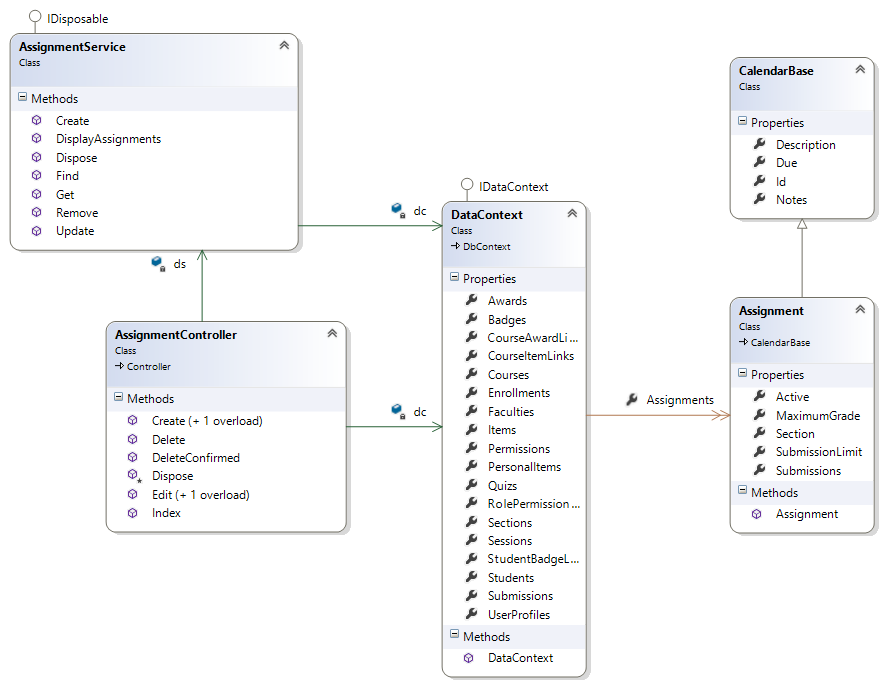
## 4.7 Session



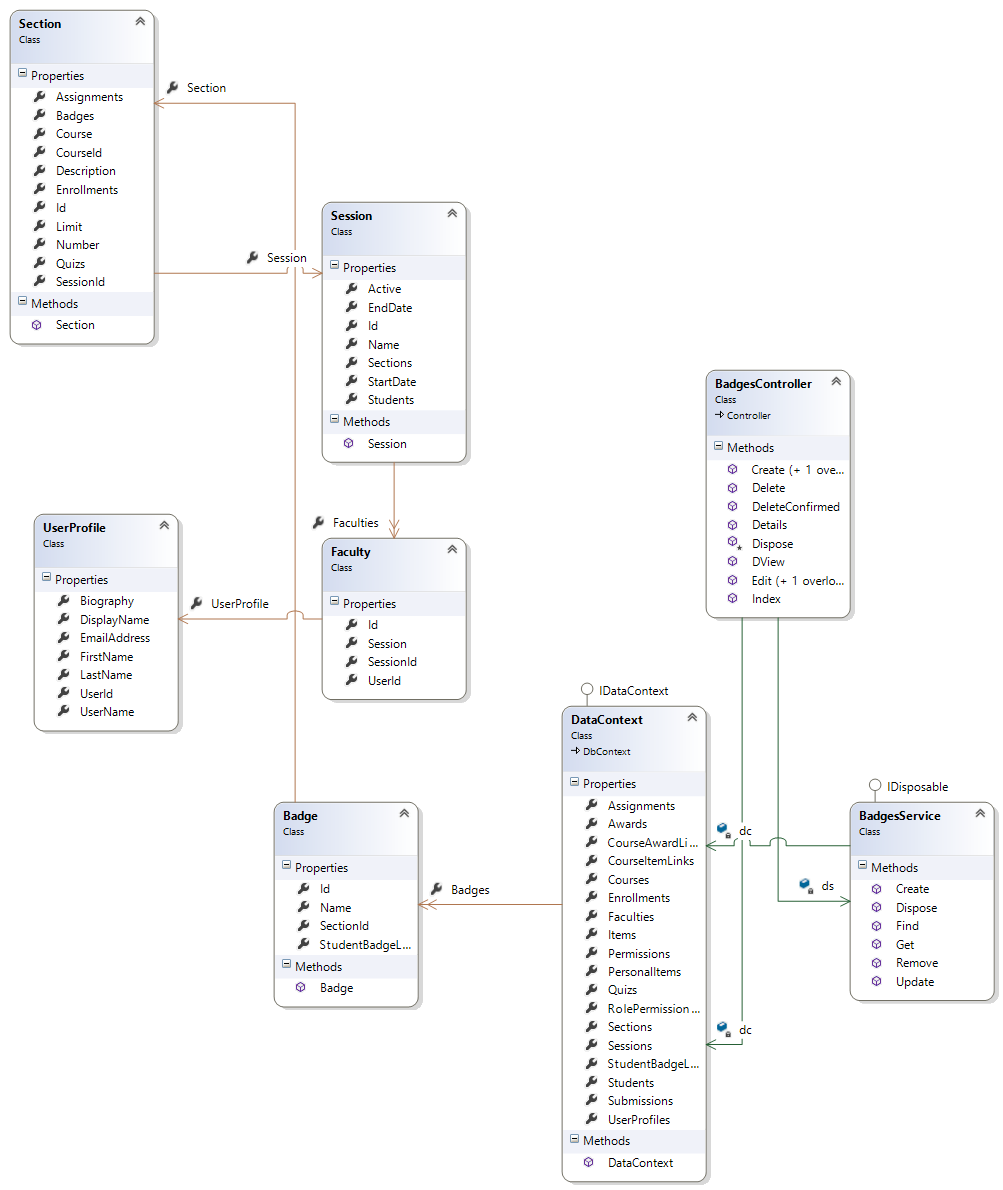
## 4.8 Student



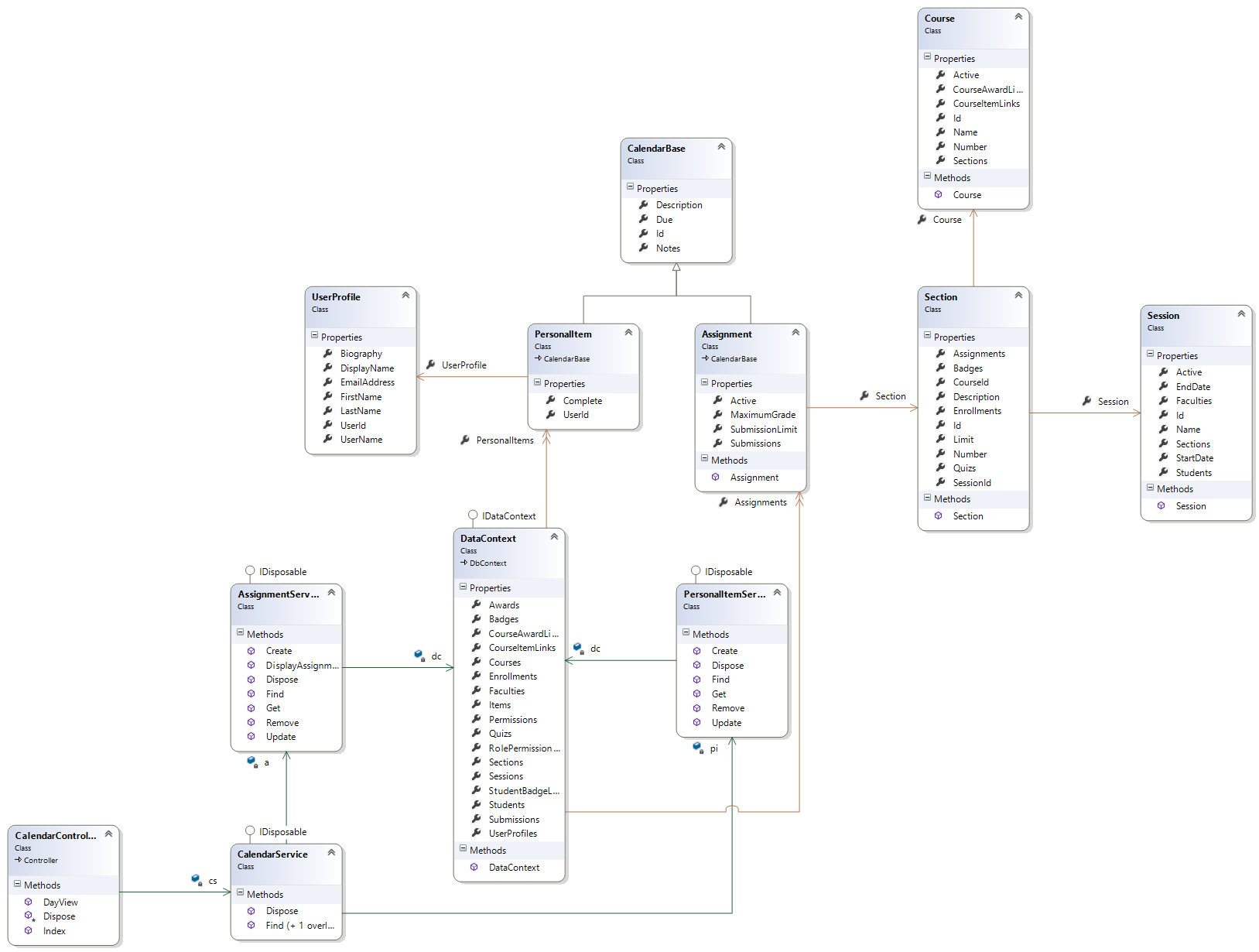
## 4.9 Assignments



## 4.10 Badges

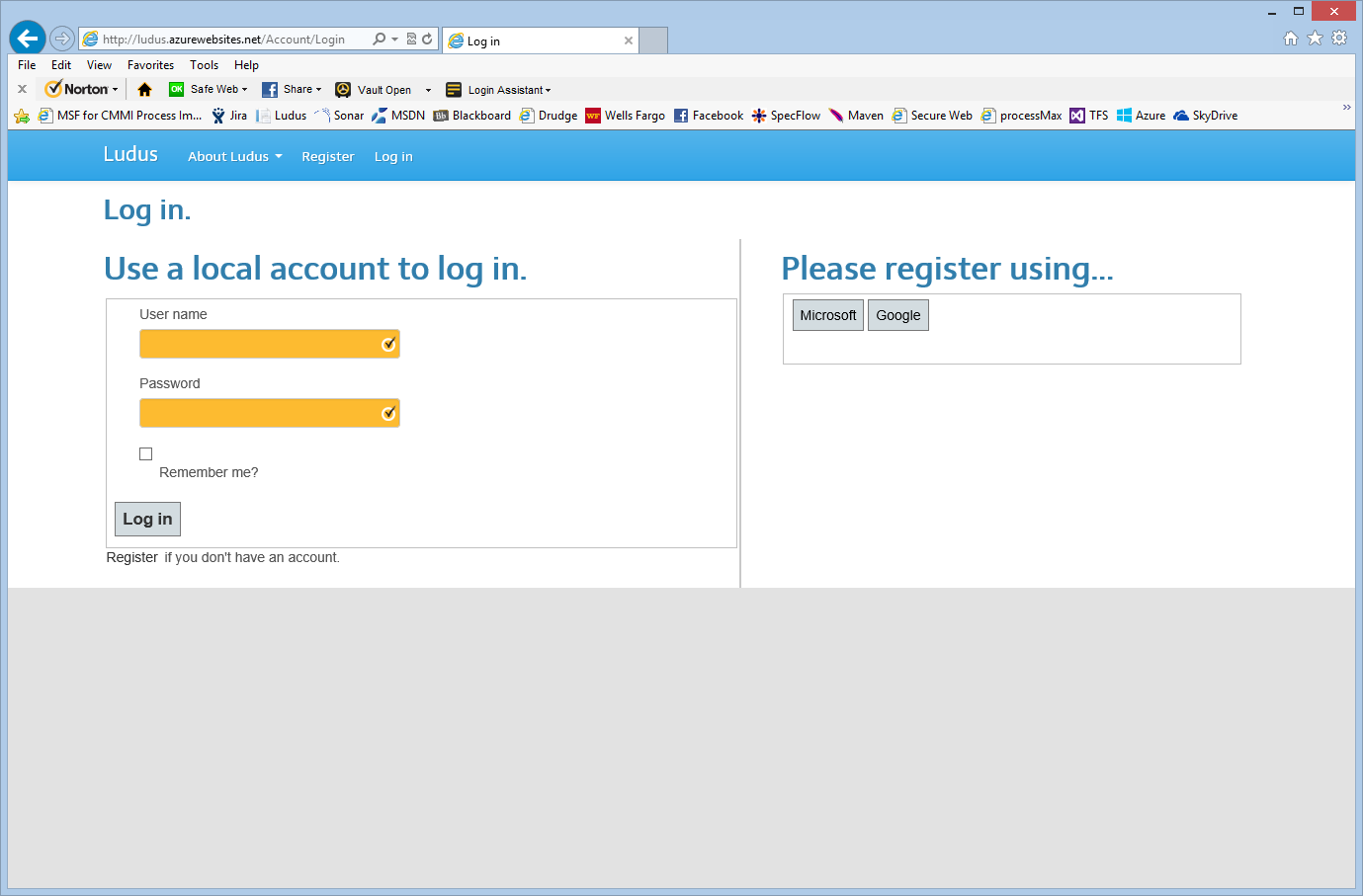


## 4.11 Calendar

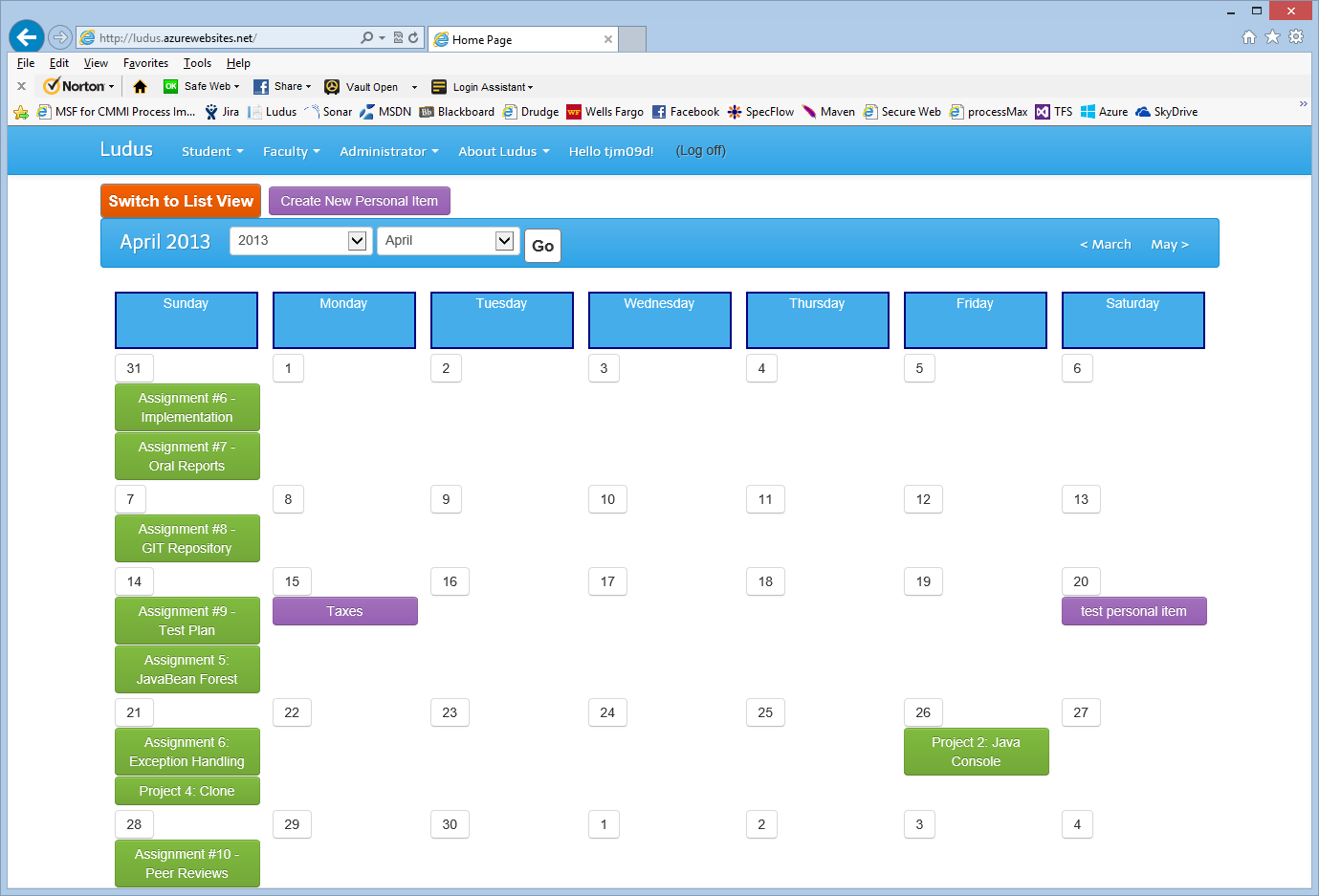


# 5 User Interface Screens

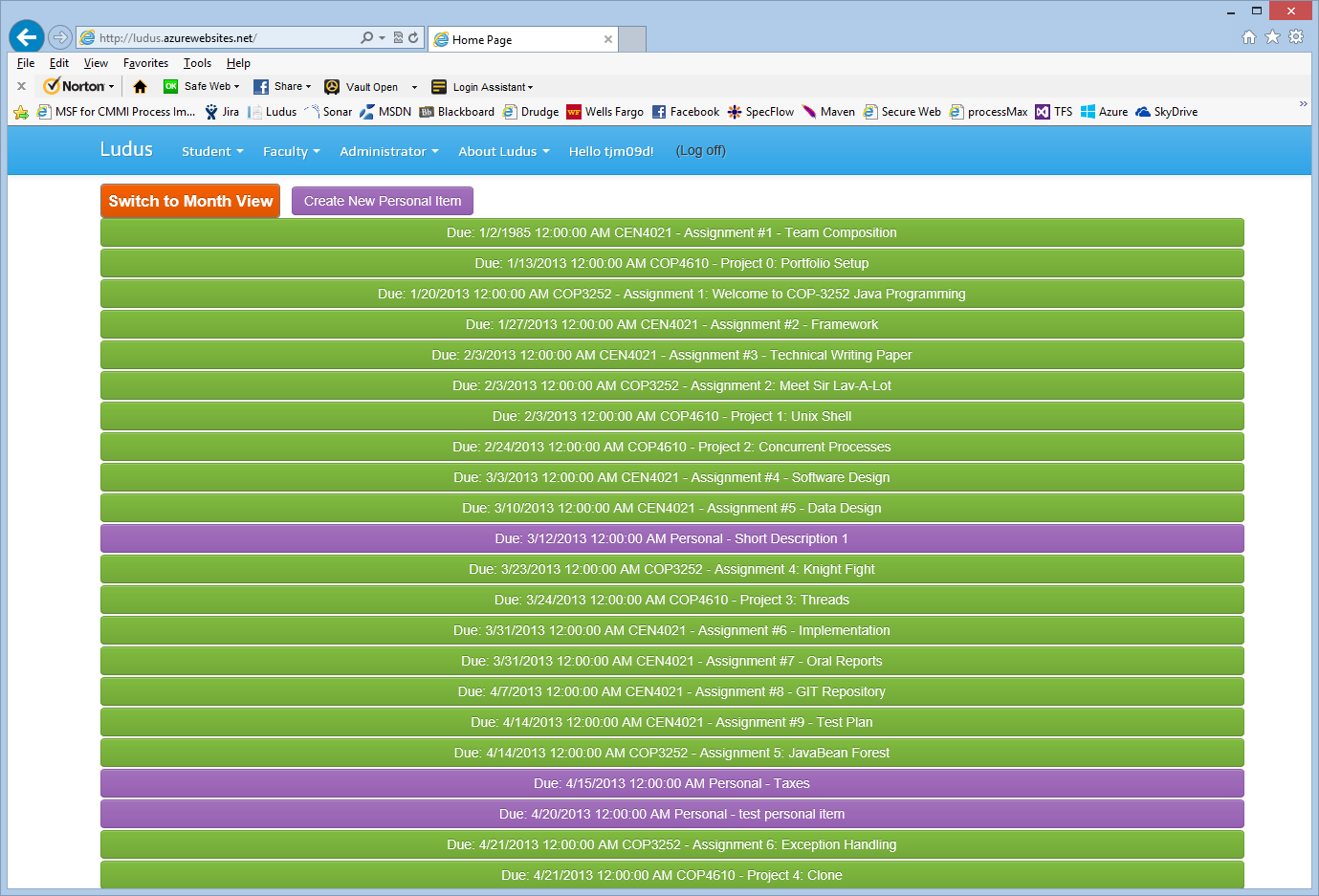
## 5.1 Login Page



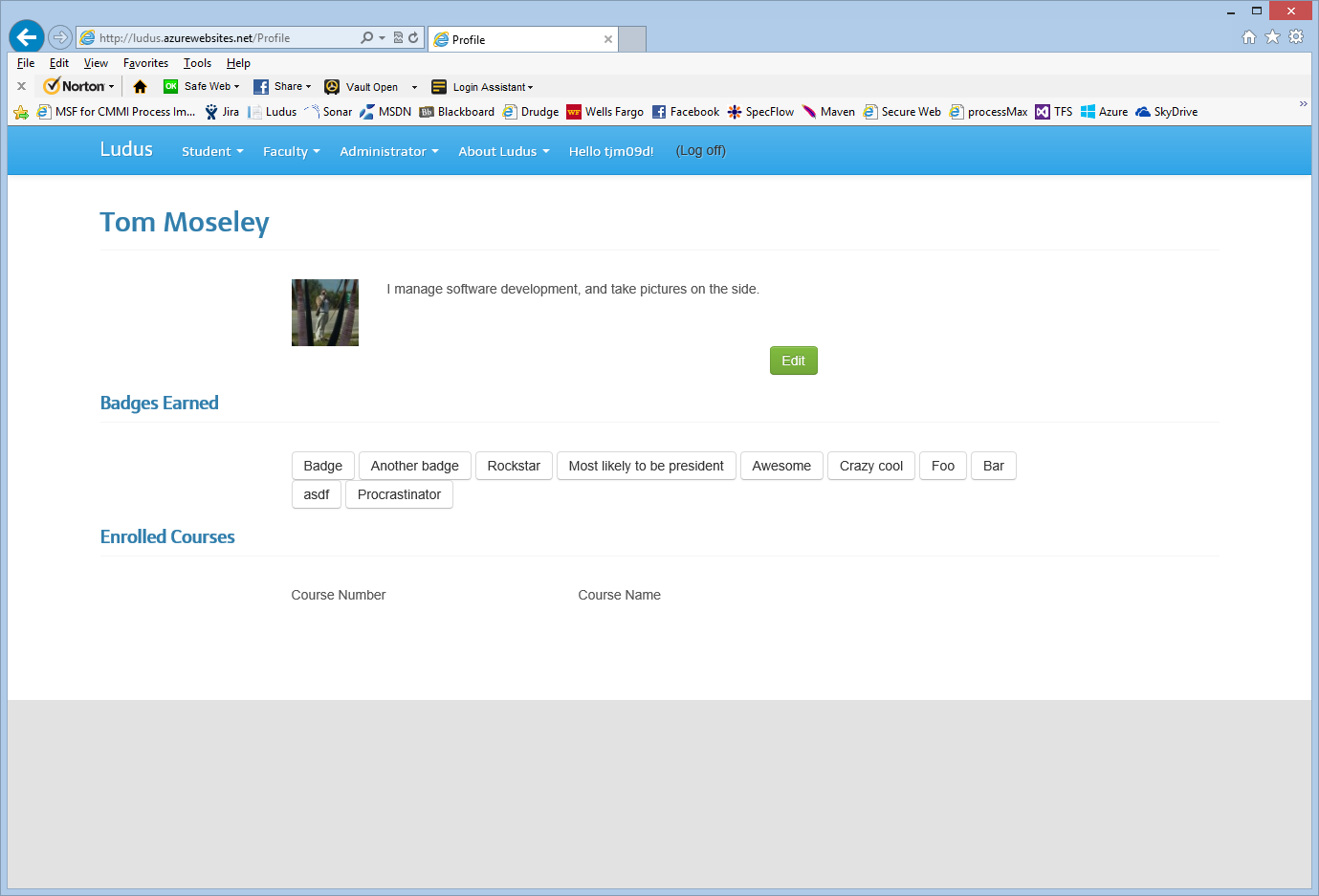
## Home Screen – Calendar View



## Home Screen – List View



## My Profile Screen



## Administrative Screen – View Assignments

