CS102
Project Report
"Yusr" Course Registration System

2024-03-14 to 2024-05-09

Please read the README file to get started with the project.

Github Repository Link: https://github.com/ahmadammarjr/Yusr

Introduction

Yusr is a Java-based registration system developed to streamline course registration processes within a university setting. This report provides an overview of Yusr's development, design, features, and implementation details.

Solution Overview

Yusr was built using Java and JavaFX for the graphical user interface. The ***MainApp*** class serves as the backbone of the system, it handles data loading/saving, redirecting to different interfaces based on the user type, and interaction between users.

Features

1- Role-Based Access: Users authenticate based on their role (Admin, Advisor, or Student) to access specific functionalities designed for their responsibilities.

2- Admin Interface: Enables administrators to manage student, advisor, and course records efficiently, including adding, removing, and updating information.

3- Advisor Interface: Allows advisors to handle special registration requests from students, approve/deny them, and view students schedules.

4- Student Interface: Provides students with features to register for courses, view course details, and submit special registration requests to advisors.

5- Data Management: Utilizes persistent storage using text files to maintain student, advisor, and course information across sessions.

Implementation Details

YUSR follows an object-oriented design:

- ❖ User data (Admin, Advisor, Student) and course data (Course) are stored in text files under specific directories (Data/Admin, Data/Advisor, Data/Student, and Data/Course).
- ❖ Data is loaded into hash maps in **_MainApp_** class upon application startup using file I/O operations.
- ❖ JavaFX controller classes (such as **_AdminInterfaceController_**) are responsible for user interactions and input. These controllers validate user input locally before communicating with MainApp to execute data modification operations.

Development Tools Used

Programming Languages: Java (8u111)

IDE: NetBeans 8.2

GUI Design: SceneBuilder 8.2 with JavaFX

Version Control: Initially manual until V23, then GitHub

Styling: JavaFX CSS

Team

Ahmad Ammar

Role: Project Lead

Responsibilities:

- Implemented core features and functionalities.

- Developed the graphical user interface (GUI).

Mohamad Yahya

Role: Developer

Responsibilities:

- Implemented core features and functionalities.

- Contributed to software implementation and testing.

Nasser Alkahtani

Role: Developer

Responsibilities:

-Implemented core features and functionalities.

-Optimized code performance and efficiency.

Notes

- ❖ The use of *hashCode()* to hash passwords is not secure by any means and should be avoided. We wanted to communicate the general idea without shifting the focus of the project.
- ❖ Adding new admins can only be done manually, by creating a .txt file in *Data/Admin* following the format in *Documentation/Data_Folder_Files_Format/Admin_File_Format*.
- ❖ The project's complete development history is available upon request, as the GitHub repository includes only the history from when we transitioned to using GitHub for version control.

Diagrams
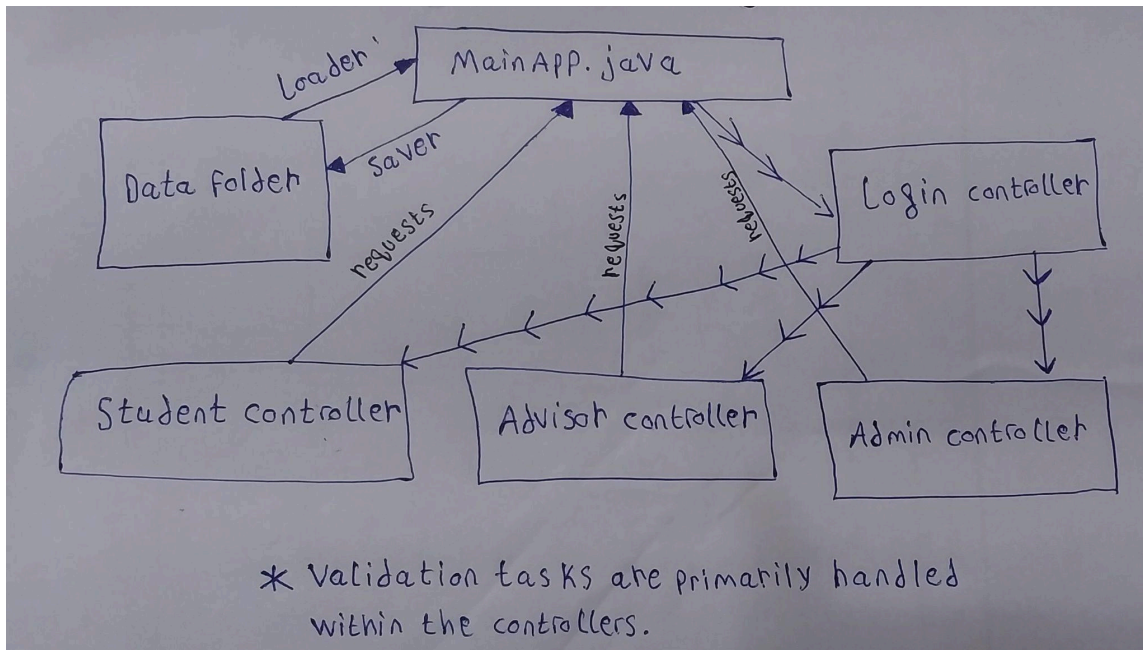
System Outline
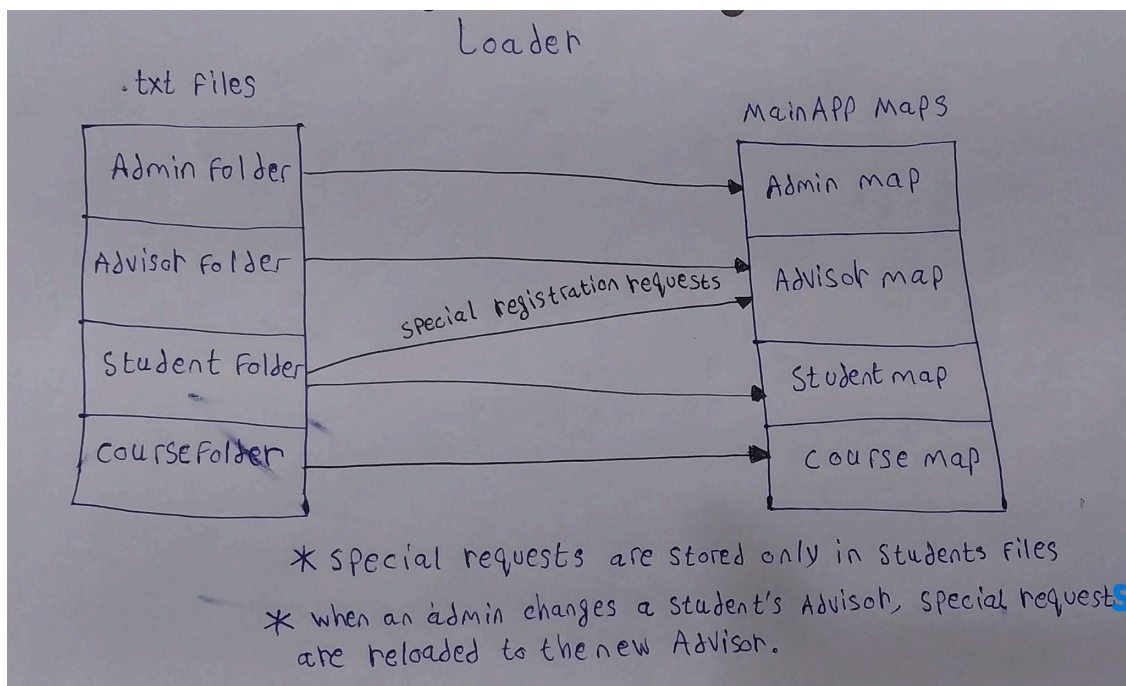
The Loader

Screenshots
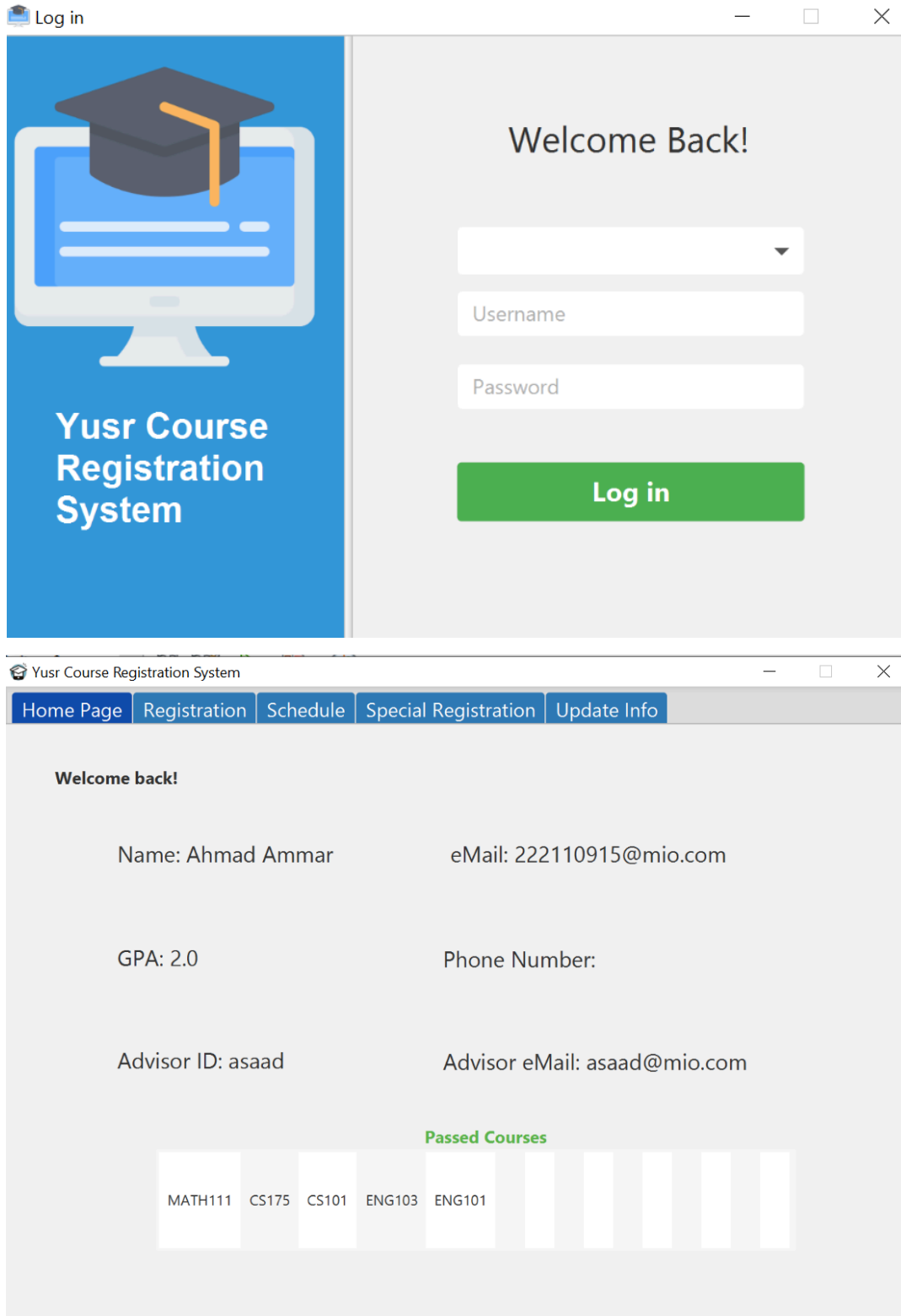
Log in

Welcome Back!

Username

Password

Log in

Yusr Course Registration System

Yusr Course Registration System

| Home Page | Registration | Schedule | Special Registration | Update Info |

Welcome back!

Name: Ahmad Ammar   eMail: 222110915@mio.com

GPA: 2.0   Phone Number:

Advisor ID: asaad   Advisor eMail: asaad@mio.com

Passed Courses

MATH111   CS175   CS101   ENG103   ENG101

Yusr Course Registration System — ☐ ✕

| Home Page | Registration | Schedule | Special Registration | Update Info |

Course Name	Course Code	Course Instructor	Lecture Time	Status
CALCULUS I	MATH111	Dr. Kamal	S M T W 10am	Passed
CALCULUS II	MATH113	Dr. Aiman	S M T W 11am	Registered
COMP. ORG. & DIGITAL LOGIC	CS175	Dr. Yasser	S M T W 9am	Passed
DISCRETE MATHEMATICS	CS285	Dr. Ammar	S M T W 1pm	Registered
EMBEDDED SE	SE381	Dr. Yasser	S M T W 2pm	Not registered
INTRODUCTION TO SE	SE201	Dr. Ali	S M T W 11am	Not registered
SE REQUIREMENTS ENG.	SE311	Dr. Ammar	S M T W 10am	Not registered
SE DESIGN & ARCHITECTURE	SE322	Dr. Ali	S M T W 11am	Not registered
COMPUTER PROGRAMMING I	CS101	Dr. Murad	S M T W 8am	Passed

Register

Drop

Show Details

Yusr Course Registration System — ☐ ✕

| Home Page | Registration | Schedule | Special Registration | Update Info |

Course Name	Course Code	Course Instructor	Lecture Time	Status
CALCULUS II	MATH113	Dr. Aiman	S M T W 11am	Registered
COMP. ORG. & DIGITAL LOGIC	CS175	Dr. Yasser	S M T W 9am	Passed
DISCRETE MATHEMATICS	CS285	Dr. Ammar	S M T W 1pm	Registered
EMBEDDED SE	SE381	Dr. Yasser	S M T W 2pm	Not registered
INTRODUCTION TO SE	SE201	Dr. Ali	S M T W 11am	Not registered
SE REQUIREMENTS ENG.	SE311	Dr. Ammar	S M T W 10am	Not registered
SE DESIGN & ARCHITECTURE	SE322	Dr. Ali	S M T W 11am	Not registered
COMPUTER PROGRAMMING I	CS101	Dr. Murad	S M T W 8am	Passed
COMPUTER PROGRAMMING II	CS102	Dr. Adel	S M T W 8am	Registered

Credits: 3 Hours

Course Description:
This course discusses software engineering practice and methods for embedded systems, focused around state machines as a unifying formalism for understanding software, hardware, and systems. It also discusses embedded software requirements, specification, analysis, principles of embedded software architecture and design, design of concurrent systems, and testing and analysis techniques for embedded systems.

Prerequisites:
SE322
  SE311
    SE201
      CS102
        CS101
      ENG103
        ENG101
CS355
  CS175

Hide Details

Yusr Course Registration System

Home Page | Registration | Schedule | Special Registration | Update Info

	Sunday	Monday	Tuesday	Wednesday	Thursday
8am	CS102	CS102	CS102	CS102	
9am					
10am					
11am	MATH113	MATH113	MATH113	MATH113	
1pm	CS285	CS285	CS285	CS285	
2pm					

Yusr Course Registration System

Home Page | Registration | Schedule | Special Registration | Update Info

Special Requests History

Course	Status
SE205	PENDING

[▼]

Send New Special Request

Yusr Course Registration System   — □ ✕

| Home Page | Registration | Schedule | Special Registration | **Update Info** |

Name: Ahmad Ammar

Phone Number: -

ID: 222110915

GPA: 2.0

eMail: 222110915@mio.com

Advisor eMail: asaad@mio.com

Save

Old Password*

New Password*

Reset Password

Yusr Course Registration System   — □ ✕

| Home Page | **Manage Students** | Manage Advisors | Manage Courses | System Statistics |

ID	Name	GPA	Advisor ID
333220222	Abdelrahman Ammar	4.0	rramy
333220908	Amr Sami	3.12	mhamed
333220543	Ali Omar	2.5	asaad
222110915	Ahmad Ammar	2.0	asaad
333220768	Nasser Alkahtani	3.5	rramy
333220567	Ali Muteb	3.56	jahmad
333220798	Murshed Alsaleh	3.92	jahmad
333220657	Mohamad Yahya	3.5	mhamed
333220932	Nasser Alsaud	3.92	snasser
333220965	Samer Saad	3.87	rramy

ADD

Manage

Yusr Course Registration System

Home Page | **Manage Students** | **Manage Advisors** | **Manage Courses** | **System Statistics**

ID	Name	GPA	Advisor ID
333220222	Abdelrahman Ammar	4.0	rramy
333220908	Amr Sami	3.12	mhamed
333220543	Ali Omar	2.5	asaad
222110915	Ahmad Ammar	2.0	asaad
333220768	Nasser Alkahtani	3.5	rramy
333220567	Ali Muteb	3.56	jahmad
333220798	Murshed Alsaleh	3.92	jahmad
333220657	Mohamad Yahya	3.5	mhamed
333220932	Nasser Alsaud	3.92	snasser
333220965	Samer Saad	3.87	rramy

Name*   GPA (Default is 0)

ID*   Password*

Advisor*

Save

Passed Courses

MATH111
MATH113
CS175
CS285
SE381

Manage

Yusr Course Registration System

Home Page | **Manage Students** | **Manage Advisors** | **Manage Courses** | **System Statistics**

Name*

ID*

Password*

Save

Name	ID
Dr. Muteb Hamed	mhamed
Dr. Jamal Ahamd	jahmad
Dr. Ramy Khaled	rramy
Mr. Sultan Nasser	snasser
Mr. Ali Saad	asaad

Manage

Yusr Course Registration System

Home Page | Manage Students | Manage Advisors | **Manage Courses** | System Statistics

Course Code	Course Name	Course Instructor	Lecture time	Enrolled	Max	Credits
MATH113	CALCULUS II	Dr. Aiman	S M T W 11am	1	8	3
CS175	COMP. ORG. & DIGITAL LOGIC	Dr. Yasser	S M T W 9am	2	8	3
CS285	DISCRETE MATHEMATICS	Dr. Ammar	S M T W 1pm	1	8	3
SE381	EMBEDDED SE	Dr. Yasser	S M T W 2pm	0	5	3
SE201	INTRODUCTION TO SE	Dr. Ali	S M T W 11am	0	5	3
SE311	SE REQUIREMENTS ENG.	Dr. Ammar	S M T W 10am	0	8	3
SE322	SE DESIGN & ARCHITECTURE	Dr. Ali	S M T W 11am	0	5	3
CS101	COMPUTER PROGRAMMING I	Dr. Murad	S M T W 8am	1	8	4
CS102	COMPUTER PROGRAMMING II	Dr. Adel	S M T W 8am	1	5	3
CS223	LINEAR ALGEBRA	Dr. Hamad	S M T W 10am	0	8	3

Save

Course Code*
Course Name*
Course Instructor*
Credits*

Course Days*
Course Hours*
Max Enrollment (5-10)

Course Description

MATH113
CS175

Remove Course

Yusr Course Registration System

Home Page | Manage Students | Manage Advisors | Manage Courses | **System Statistics**

Number of Users

19

Number of Courses

16

Number of Students

12

Number of Advisors

5

Number of Admins

2

Average class Size

Refresh

Yusr Course Registration System

Home Page | **Students** | Students Schedules | Special Registration Requests

ID	Name	Gpa	eMail	Phone Number
222110915	Ahmad Ammar	2.0	222110915@mio.com	-
333220543	Ali Omar	2.5	333220543@mio.com	-

Yusr Course Registration System

Home Page | Students | **Students Schedules** | Special Registration Requests

222110915		Sunday	Monday	Tuesday	Wednesday	Thursday
333220543						
	8am	CS102	CS102	CS102	CS102	
	9am					
	10am					
	11am	MATH113	MATH113	MATH113	MATH113	
	1pm	CS285	CS285	CS285	CS285	
	2pm					

Yusr Course Registration System — □ ✕

| Home Page | Students | Students Schedules | Special Registration Requests |

Student Name	Student ID	Course
222110915	222110915	SE205

Deny Request

Approve Request