**Student Enrollment System**

**Summary**Student enrollment system was developed to the Eastern Sydney University so the Students (and new Students) can enroll in the units that are being offered in the current semester. This system covers the entire module such as how the student can enroll, what are the unit offered, what are the time schedule for each subject, unit information, and student profile, etc. This system builds using java and using MYSQL database to store the user information, and system user java swing JFrame technology to represent the user interface.

**Introduction**

The project is integrated with the main University’s system, however, only the module Enrollment will be developed. The only users are the Students and Staff that use the system. In this project, we use Object oriented paradigm with JFrame to build the user interface. This project has two users named Student and Administrator. The student web Interface contains a login page where after providing the login details and the home page is appeared for the user where it shows important notifications and activities in the college like semester fee payment dates, exam registration, change in the exam time table, workshops or fests to be held, etc. Students can schedule their time table by selecting multiple units. The admin module allows admin to make changes in student academic and personal details. Administrators are responsible to add the students and can manage and create student news board. This system does not cover the whole university management. However, it is integrated with the main system.

**System Analysis**

The development of this java application is done by requirement analysis. The requirement phase involves the gathering of necessities and demands of each category of user – student and admin, then prioritizing these requirements like software system availability. Here some specific subsystem functional requirements are demonstrated:

**Administrator Requirement**

* Able to Manage and Add the student information
* Able to Manage Unit Information
* Able to edit and add student unit board
* Able to add and edit news board

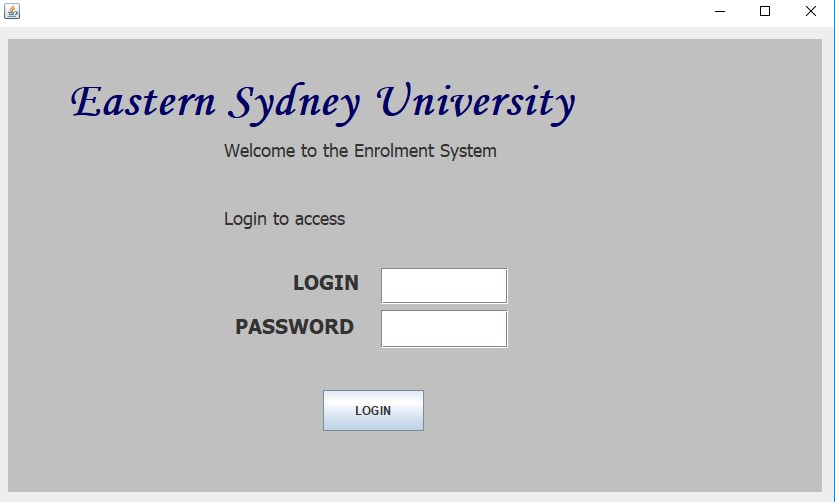
**Student Requirements**

* To view his/her data personal
* Able to update password and email information
* To get all up-to-date notifications or activities in his/her course/department.
* To able to check the unit time-table
* To access unit information.

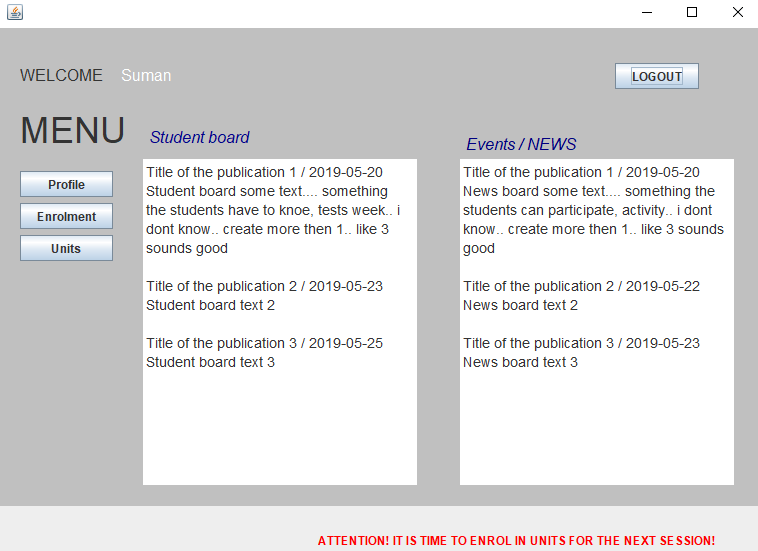
Based on this user requirement we develop the system and here are some screenshots of our system and their functionality explained.

**Login Page**

This is the main landing page of the system. From this page, the user can enter the user name password and get login into the system. As mentioned above there is two users and which user get login it decided based on username and password entered by the user.

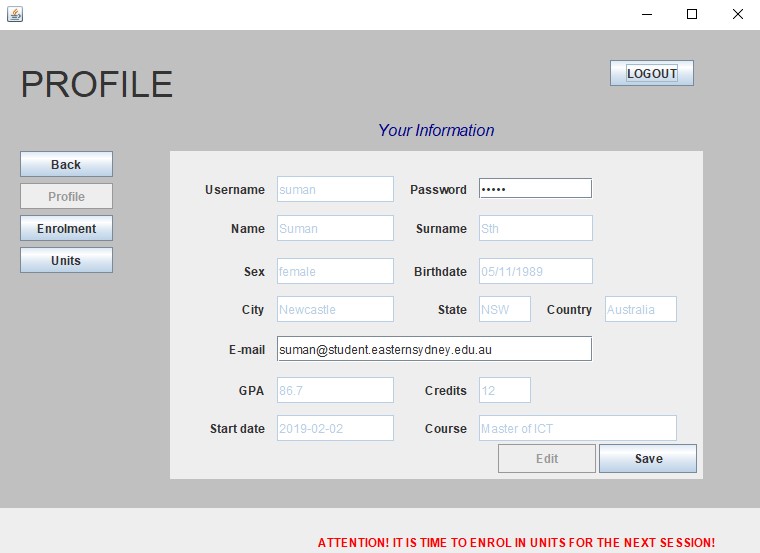


**Student Home Page**



This module is accessible by student. They can see a different menu as well as read student board and news board information. There is three option in menu profile, enrolment, units. At right One logout button is present so that the user can securely log out from the system.

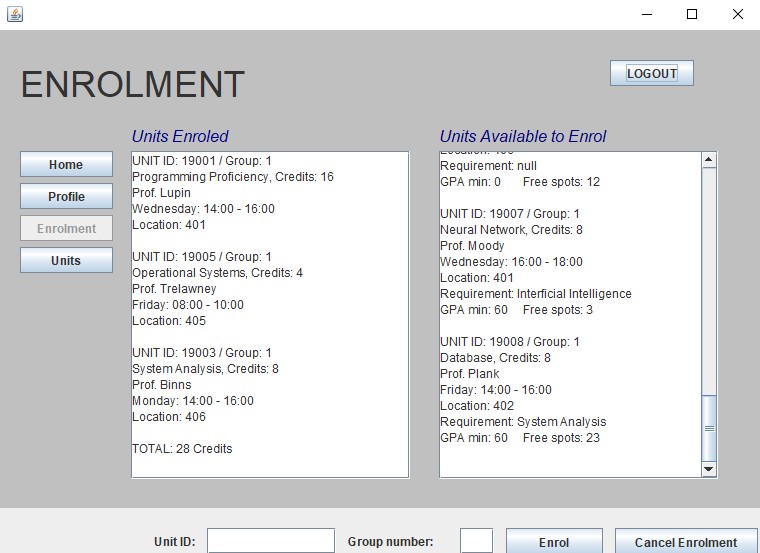
**Profile**



In the profile module, user can see their personal information and able to update email and password. They can see their current GPA and credits, course information.

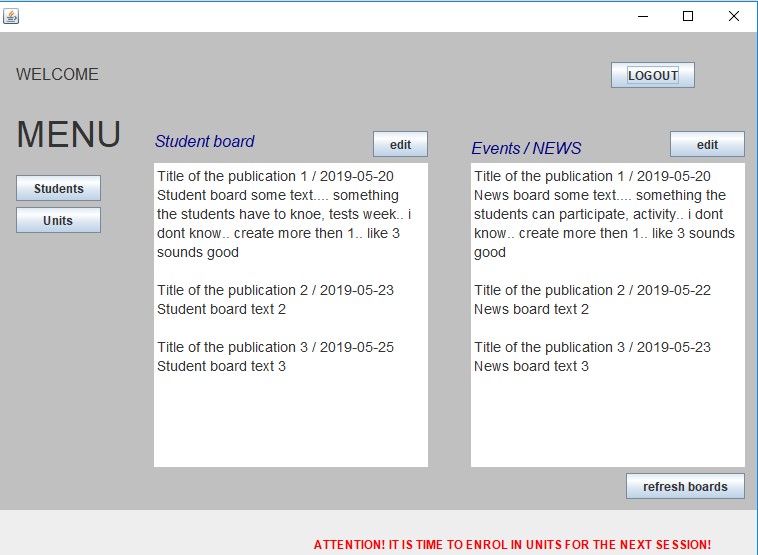
**Enrolment**

This is the most important module of the system, which validates all the system requirement. Student can see available units and enrolled units on screen and get enroll for new subjects as per time schedule choice. They can see all the unit related information from the unit menu.

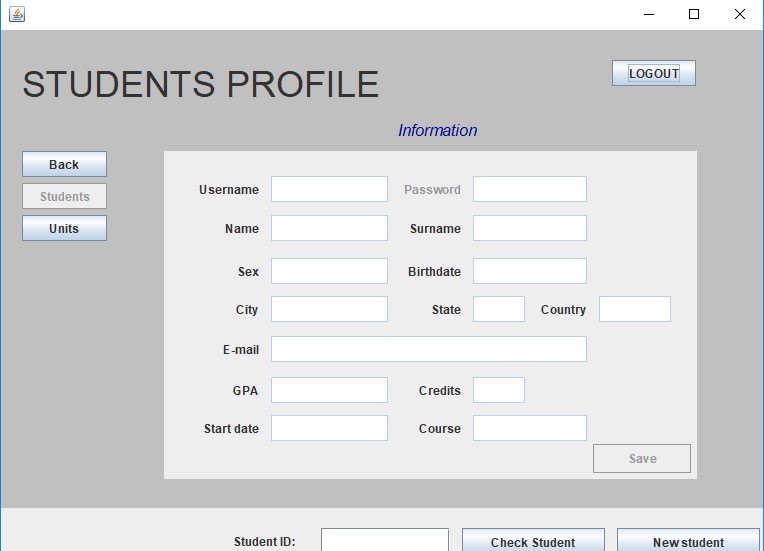


**Admin Home Page**

In the admin home page, there are two menu students and units. There is also an option for update student board and news board.

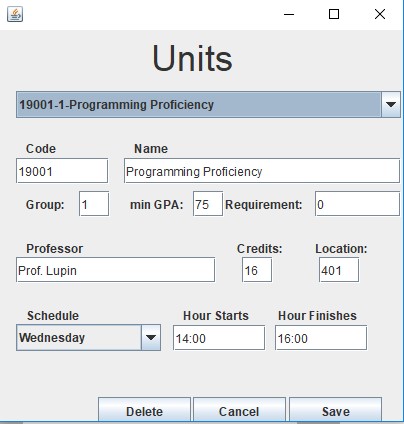


**Student Module**



In this module, the administrator can edit Information for existing student or can register a new student.

**Unit Module**



In the Unit module, all unit related information can be managed. New units can be inserted with all necessary information like credits, minimum GPA and time schedule.

So basically, this is a system user interface with java object-oriented programming language in which the user can easily interact with the system and do the necessary operation. It has a basic menu with a clear name therefor the intended user can easily interact with the system and perform enrollment operation with few clicks. It will not cover the entire university module but as per our scope, that was a small integrated part of the system.

Student enrollment system developed with a Java programming language which supports object-oriented programming language. Object-oriented programming (OOP) refers to a type of computer programming in which programmers define not only the data type of a data structure but also the types of operations (functions) that can be applied to the data structure. In this way, the data structure becomes an object that includes both data and functions. In addition, programmers can create relationships between one object and another. For instance, objects can inherit characteristics from other objects. One of the principal advantages of object-oriented programming techniques over procedural programming techniques is that they enable programmers to create modules that do not need to be changed when a new type of object is added. A programmer can simply create a new object that inherits many of its features from existing objects. This makes object-oriented programs easier to modify. There are many concepts of object-oriented programming which we used in our system, these concepts are described below.

* **Class**

A class is a collection of method and variables. In our System for every screen we build class and each class has several method and variable. This method performs some of the operation and access, store user data into a variable and assign them to JFrame visually components like input field and text fields.

* **Objects**

An object is a software bundle of related state and behavior. Software objects are often used to model the real-world objects that you find in everyday life. In our system, every class has an object and it has different state and behavior which was accessible by other classes too.

* **Package**

A package is a namespace for organizing classes and interfaces in a logical manner. Placing your code into packages makes large software projects easier to manage. Our system is built under one package, so it is easy to access all class and object within the same package with public visibility.

* **Inheritance**

Inheritance provides a powerful and natural mechanism for organizing and structuring your software. In Java programming language superclass functionality can be derived into a subclass, therefore inheritance allows the code reusability. Our system every class extends the functionality of core Java class like JFrame as well as java util class awt classes.

* **Array List**

The ArrayList class is a resizable array, which can be found in the java.util package.

The difference between a built-in array and an ArrayList in Java, is that the size of an array cannot be modified, while elements can be added and removed from an ArrayList whenever you want. Our system uses an array list to store data from the database and assign them to visual JFrame.

* **Exception handling**

In java exception handling done through the try-catch block that paradigm, we use in our system. If an exception occurs in try block then the control of execution is passed to the corresponding catch block. A single try block can have multiple catch blocks associated with it, the generic exception handler catch block is at the last.

Java is a rich programming language set and there are many strong technological aspects. In my opinion, our student enrollment system covers many strong technical aspects. Firstly, it uses inheritance so that this provides code reusability. Second is exception handling any error will be caught in the catch block, so the user can interact with the system quickly and easily. Furthermore, we use a database with JDBC technology so that we can easily manage user data and perform many operations with ease. Moreover, JFrame usage provides a simple visual graphical interface so that user can access the view the information n very simple way.

**Conclusion**

In conclusion, the main purpose of student enrollment system is to develop a system which provides the functionality to university student to enroll in different units with different time schedule as per their choice. Students can see basic information which is related to their course and department also they can do analyses the provided units. This system uses best object-oriented programming concepts that provide code reusability, error handling, and simple graphical user interface and connection to an external database to store student information and unit information.

Overall it is a good experience to develop the system. Programming proficiency unit provides the best knowledge about object-oriented programming, how we can create the new object without affecting the existing object and classes. We can use many methods with the same data and uses the feature of code reusability with super class and subclass hierarchy. Java is secure and most reliable language and it is best practice to develop a major system using object-oriented programming language.