

University Managing Tool

Documentation

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Introduction

The University Managing Tool is a C++ project designed to assist in managing various aspects of a university system. It provides functionalities for managing students, subjects, programs, faculties, and universities within the system.

Features

The University Managing Tool offers the following features:

- **Student Management:** Allows the creation and management of student records, including their ID, first name, and last name.
- **Subject Management:** Enables the creation and management of subject records, including subject name, grades for lab tests, midterm exam, final exam, and attendance records.
- **Program Management:** Provides functionalities to create and manage academic programs within a faculty, including program name, number of students, and subjects offered in each semester.
- **Faculty Management:** Allows the creation and management of faculties within the university system, including faculty name and the programs offered by the faculty.
- **University Management:** Enables the creation and management of universities within the system, including university name and the faculties associated with it.

Class Structure

The project is structured using the following classes:

- **Student class:** Represents a student with attributes such as ID, first name, and last name. It has accessor methods to retrieve these attributes.
- **Subject class:** Represents a subject/course with attributes such as subject name, grades for lab tests, midterm exam, and final exam, as well as attendance records for lab and course. It provides methods to calculate the average lab grade and the final grade for the subject.
- **Program class:** Represents an academic program/major within a faculty. It has attributes such as the program name, the number of students enrolled, and sets of subjects for each semester. It provides accessor methods to retrieve program information.
- **Faculty class:** Represents a faculty within a university. It has attributes such as the faculty name and a set of programs offered by the faculty. It provides accessor methods to retrieve faculty information, as well as methods to calculate the total number of students enrolled in the faculty.
- **University class:** Represents a university. It has attributes such as the university name and a set of faculties within the university. It provides an accessor method to retrieve the university name.