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CS 203 F20 Project 1: C W Liew

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Overview:

Main purpose of this project is to implement multiple ArrayLists and LinkedLists, parse through files, allocate and free pointers without memory leaks, and sharpen general coding skills in c. Information provided through files are stored in data structures designed for departments and degrees. After everything is stored, user can perform different commands on the data to display desired information.

Design:

Design can be split into two major parts: department and degree.

Department:

- ArrayList of the department keeping track of size.
- Department contained an ArrayList of courses and name.
- Course had a name, a title and LinkedList of prerequisites.
- Prerequisites kept track of names.

Degree:

- Arraylist of degree keeping track of size.
- Degree keeps track of all the course requirements

Setup:

Code is distributed with it's own makefile. Simple **make run** should start the program if 4 files are provided by default: department1.txt, department2.txt, degree1.txt, and degree2.txt. These can be adjusted from makefile. Available commands include:

- c course name - shows the title and prerequisites for the course.
- d degree name - prints out degree requirements.
- S course name - shows effects of taking course: available courses that can be taken, and degrees that progress.
- P type name(2 parameters) - The type can be c - course, d - department, g - degree. Prints out all the available information.
- x (no parameter) - exits the program.

Debug:

Makefile provides **make debug**, compiling files in debug mode. Distributed version has been checked for memory leaks using **Valgrind**.