

CIS112_2025_1 Midterm_1

Question 1, Group 1

Introduction

We use generic stacks for a simple database application. There are two stacks, one for section information and course information. These stacks are populated through csv (comma seperated values) files, CourseDetail.csv and CourseProgram.csv files.

Suppose `stack` is a generic stack. To obtain `x`, pop the `stack`, immediately push `x` back into `stackTmp` so that it is not lost. Then process `x`.

Once all items in the `stack` is processed, replace `stack` with `stackTmp`.

Template.

```
while (!stack.empty()) {
    x = stack.pop();
    stackTmp.push(x);

    // process x
}
stack = stackTmp;
```

Java

Implementation

Devise an algorithm to find total credits for all courses in the databases, CourseProgram.csv and CourseDetail.csv file. These files are pushed on to the respective tacks via `populate()` method in `DataBaseCourse.java`.

Complete method `totalCredits()` in `DataBaseCourse.java` which finds to total number of credits for all courses in the `sectionStack`. Note that course credit information is in the `courseStack`.

Testing

Run `DatabaseCourse_Test.java` to see the result for `CourseDetail-2.csv` and `CourseProgram-2.csv` .

Fill in `StudentInfo.java` with your identity information.

Run `DatabaseCourse_Junit.java` to test your code with different databases.