Carlos Rodriguez

Professor Yurik

CS 300

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Project One Milestone Two

//Hash Table - Milestone 2

void searchCourse(HashTable<Course> courses, String courseNumber) {

}

Part One

Function To load the course data (fileName: String)

// Open the file of course information

Set the input File equal to file name that is opened

If the input file cannot be opened:

Print an Error message of the file not being able to be opened

Exit out of the function

// Initialize a hash table to store all the courses needed

Hash Table is created with the course table information

// Loop through each line in the file

While not at the End of the input file:

The current line is equal to the next line from the input file

// Skip the lines that are empty

If the current line has no information,

Continue the Loop process

// Parse the line and split it by commas

The array of data is equal to the Split of the current line with "," in between

// Validate that the line has at least two parameters of the course number //and the course name

If the length of the data less than two:

Print an error message of the format

Continue the Loop process

Function Validate the Prerequisites(courseTable: HashTable)

For each course in the course table:

// If the course has prerequisites, print them

If course prerequisites is not empty:

Print all the applicable prerequisites

// Iterate through each prerequisite

For each prerequisite in the course prerequisites:

Search for the prerequisite course in the hash table

// If the prerequisite course is found, print its information

If prerequisite of the course is not null:

Print the prerequisite course with the other course information

Else: Print no prerequisite required for the course.

// If validation passes, create and insert the course

Create the course object with all the necessary information like name, number and

Prerequisites, if needed

End Function

// Close the input file

Return the information of the course table.

Part Two

// Structure the course

Make the course number into a string

Make the course name into a string

Make the prerequisites as a list

// Extract the course information

The course number is a string that starts at data[0].

The course name is a string that starts at data[1].

The array of prerequisites start from data index 2 to end

// Create the Course Object

First thing is to set a default for the course item

Set the course number

Set the course name

Set the course prerequisites

// Add the course to the hash table

Insert the data into the table using

courseTable.Insert(course.courseNumber, course)

Create a hash key to give the course a unique index in the table

Append the new node to the end of the list

Part Three

Function to call to Print all the courses from the hash table:

Print the "Course Information:"

For each bucket that is in the hash table:

Set the current node equal to the bucket item

While current node course is not null:

Print the Course Number

Print the Course Title

If the prerequisites is not empty:

Print the Prerequisites of the course

Else:

Print that there are no Prerequisites

Keep going onto the next course node

Return information of the table.