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CS 300: Project One Milestone Two: Pseudocode

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**Part 2-Hash Table Data Structure:**

//Define structure to hold course info.

Struct Course

String courseNumbers

String title

String ListPrerequisites

//Loading the course data

FUNCTION loadCourseFile

IF file can’t open

PRINT “File can’t open” error message

RETURN

WHILE not at the end of the file

READ each line from the file

IF the line isn’t empty

ADD line to courseLines

END WHILE

CLOSE file

FOR EACH line in courseLInes

SPLIT the line into parts using commas

IF there are fewer than 2 items

PRINT “Line missing course number or title” error message

ELSE

ADD to courseNumbers

FOR EACH line in courseLines

SPLIT line by comma

FOR index from second to end of line

IF not found in courseNumbers

PRINT “Prerequisites not found” error message

//Create courses to store in the hash table

FOR EACH line in courseLines

SPLIT by commas

SET courseNumber

SET title

CREATE empty prerequisitesList

FOR prerequisites found

ADD to prerequisitesList

CREATE course with courseNumber, title, prerequisitesList

INSERT course into courseTable by courseNumber

//Print all courses in alphanumeric order

FUNCTION printAllCourses

CREATE empty courseNumberList

FOR EACH number in courseTable

ADD number to courseNumberList

SORT courseNumberList alphanumerically

FOR EACH number in courseNumberList

Course = courseNumber

PRINT courseNumber and courseTitle

//Print a specific course with its prerequisites

FUNCTION printCourse

IF courseNumber isn’t found

PRINT “Course not found”

RETURN

Course = courseNumber

PRINT “Course Number” + course.courseNumber

PRINT “Title” + course.title

IF course prerequisites is empty

PRINT “No prerequisites”

ELSE

PRINT “Prerequisites”

FOR EACH prerequisites in course.prerequisites

PRINT “ “ + prerequisites

**END**

**Pseudocode for a menu:**

START PROGRAM

REPEAT until user selects to exit:

DISPLAY the menu:

1. Load course data from the file
2. Print all courses in alphanumeric order
3. Print course information and prerequisites for an individual course

9. Exit the program

PROMPT user for their choice

READ user choice

IF userChoice is 1:

ASK user for file name

CALL loadCourseData by file name

SET fileLoaded = true

ELSE IF userChoice is 2:

IF file hasn’t been loaded

PRINT “Please load the file first”

ELSE display courses in alphanumeric order

ELSE IF userChoice is 3:

IF file hasn’t been loaded

PRINT “Please load the file first”

ELSE ASK for course number to search

CALL print course info by courseNumber

ELSE IF userChoice is 9:

PRINT “Goodbye”

EXIT loop

ELSE:

PRINT “Choice isn’t valid. Please enter a valid choice”

END PROGRAM