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CS-300 DSA: Analysis and Design

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Module 5 Project 1 Milestone 3 Tree Data Structure Pseudocode

LoadCourses(filePath)

Open file at filePath for reading  
 if file cannot be opened  
 output error message  
 return  
  
 create empty list courseIds   
 create empty list courseData  
  
 for each line in file  
 parse line into courseNumber, courseTitle, and prerequisites  
 if courseNumber or courseTitle is missing  
 output error message  
 add courseNumber to courseIds  
 add courseNumber, courseTitle, prerequistes to courseData  
 for each prerequisite  
 if prerequisite is not in courseData  
 output error message

BuildCourseTree(courseData)  
 create empty tree courseTree  
 for each(courseId, courseTitle, prerequisite) in courseData  
 create new course node  
 for each prerequisite  
 find prerquisite course node in tree  
 add prerequisite course node  
 if not already existing, add course node to tree

PrintCourse(courseId)  
 course = BinarySearchTree.search(courseId)  
 if course is null  
 output error message  
 output “Course ID: “ << courseId  
 output “Title: “ << courseTitle  
 if prerequisites is empty  
 output “No prerequisites”  
 else  
 output “Prerequisites: “  
 for each prereq in prerequisites  
 output prereq

PrintAllCourses()  
 for each course node in course tree  
 PrintCourse(courseId)