**Danny Forte**

**CS-300 Analysis and Design**

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**Project One Milestone 3**

Function

OPEN file at filePath FOR reading

If file is not found

Print "Error file not found"

FOR each line in file:

SPLIT line by delimiter INTO components

IF length(components) < 2:

PRINT "Error: Invalid." AND CONTINUE to next line

ASSIGN courseNumber = components[0]

ASSIGN courseTitle = components[1]

ASSIGN prerequisites = components[2:]

FOR all prerequisite IN prerequisites:

IF no prerequisite exist as a course in binarySearchTree:

PRINT "Error: Prerequisite not found."

CREATE courseObject with courseNumber, courseTitle, prerequisites

INSERT courseObject INTO binarySearchTree

END FOR

CLOSE file

RETURN binarySearchTree

STRUCT Course:

courseNumber (STRING)

courseTitle (STRING)

prerequisites (LIST of STRINGS)

END STRUCT

FUNCTION insertIntoBinarySearchTree(root, courseObject):

IF root IS NULL:

RETURN new Node containing courseObject

IF courseObject.courseNumber < root.courseObject.courseNumber:

root.leftChild = insertIntoBinarySearchTree(root.leftChild, courseObject)

ELSE:

root.rightChild = insertIntoBinarySearchTree(root.rightChild, courseObject)

RETURN root

FUNCTION printCourseInformation(root):

IF root IS NOT NULL:

printCourseInformation(root.leftChild)

PRINT "Course Number:", root.courseObject.courseNumber

PRINT "Course Title:", root.courseObject.courseTitle

PRINT "Prerequisites:", root.courseObject.prerequisites (if any)

printCourseInformation(root.rightChild)

END FUNCTION

FUNCTION main():

SET filePath = "path/to/courseFile.txt"

SET binarySearchTree = processCourseFile(filePath)

PRINT "Course Information:"

CALL printCourseInformation(binarySearchTree)

END FUNCTION