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CS 300 SNHU

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**Module Five - Project One Milestone Three**

**PSEUDOCODE:**

**CONSTRUCTOR Course {}**

courseID = “”

courseName =””

prereqCount = 0

prereqList = “”

prereqName = “”

**CLASS BinaryTree{}**

-struct Node

Course

right pointer

left pointer

-root

+printCourse()

+BinaryTree()

**METHOD Parser (String)**

**INITIALIZE “**tempList”

**OPEN** file using parser libraries

**LOOP** through records until end of file

**IF** 1st string “courseID” and 2nd string “courseName” are present

**ADD** the first String to struct at “courseID”

**ADD** the second String to Struct at “courseName”

**LOOP** until no more data is present in file and no prerequisite exists

**ADD** to “prereqCount” for each prerequisite found

**CREATE** a variable, “prereqNames” for each prerequisite

**ADD** count to struct at “prereqCount”

**ADD** “prereqNames” to struct at “prereqList”

**RETURN** “tempList”

**END**

**METHOD searchList(String)**

**INITIALIZE** variable **“**tempCourse”

**SET “**tempCourse” to the hash location in data file

**LOOP** through list for each Course

**IF** string is the same as “courseID”

**SET “**tempCourse” to Course

**RETURN** “tempCourse”

**END**

**METHOD printCourse(String)**

**INITIALIZE** variable “tempCourse”

**SET “**tempCourse” equal to root

**LOOP** until “tempCourse” is NULL

**IF** the Node at “tempCourse” contains a bidID equal to zero

**OUTPUT “**courseId” in Course struct found within “tempCourse”

**OUTPUT** “courseName” in Course struct found within “tempCourse”

**LOOP** from 0 to “prereqCount”

**FOR** each Course in “prereqList”

**CALL** printCourse() outputting “prereqList”

**IF** the Node at “tempCourse” contains a “courseID” less than zero

**SET** “tempCourse” equal to the left Node

**IF** the Node at “tempCourse” contains a “courseID” greater than zero

**SET** “tempCourse” equal to the right Node

**END**

**METHOD validateList**()

**INITIALIZE** variable **“**tempCourse”

**CREATE** bool variable “valid” and set to True

**FOR** Each Course

**IF** valid is False

**BREAK**

**WHILE** current **“**tempCourse” is not NULL

**LOOP** 0 to “prereqCount”

**SET “**tempCourse” equal to “prereqList” in searchList()

**IF** “tempCourse” = “courseID” is empty

**SET** valid to False

**RETURN** valid

**END**

**CLASS Main()**

**INITIALIZE** variable “courseTree”

**CREATE** a new “BinaryTree” named “courseTree” of the struct-type Course

**GET** CSV file from prompt

**IF** no data is passed

**USE** default location

**PASS** CSV file into Parser()

**PASS** “courseTree” into validateList()

**GET** user value to search and store in “userSearch”

**CALL** printCourse() passing “userSearch”

**END**