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CS-300

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### 5-3 Project One Milestone Three

Start Program

Create an empty binary search tree named `courseTree`

Set the input file name to "courses.txt"

Call function `LoadCoursesFromFile` with `fileName` and `courseTree`

Call function `ValidatePrerequisites` with `courseTree`

Call function `DisplayAllCourses` with `courseTree`

End Program

Function `LoadCoursesFromFile(fileName, courseTree)`

Open the file

If the file cannot be opened

Display error message and stop

While there are lines to read in the file

Read a line

Split the line into pieces using the comma

If the number of pieces is less than 2

Display error message and skip to the next line

Set courseNumber to the first piece

Set courseName to the second piece

Set prerequisites list to the rest of the pieces (if any)

Create a course object using courseNumber, courseName, and prerequisites

Insert the course object into the binary search tree

Close the file

End Function

Function ValidatePrerequisites(courseTree)

For each course in courseTree

For each prerequisite in the course

If the prerequisite is not found in courseTree

Display an error saying the prerequisite course is missing

End Function

Function DisplayAllCourses(courseTree)

Display heading "Course List"

Traverse the binary search tree in order

For each course

Display the course number and course name

If the course has prerequisites

Display "Prerequisites: " followed by the list

Otherwise

Display "Prerequisites: None"

End Function