# CS 300 Pseudocode Document

Module 5-3 Tree Data Structure

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1. Pseudocode that shows how the program opens file reads data parses the data and finds errors:

BEGIN

OPEN course\_file

IF course\_file is not found THEN

DISPLAY "Error: File not found"

END PROGRAM

END IF

FOR EACH line in course\_file DO

READ line

IF line is not in correct format THEN

DISPLAY "Error: File format incorrect"

END PROGRAM

END IF

course\_data = PARSE(line)

course\_node = NEW Node(course\_data.course\_number, course\_data.title)

IF course\_data.prerequisites is not empty THEN

FOR EACH prerequisite in course\_data.prerequisites DO

prerequisite\_node = FIND\_NODE(prerequisite)

IF prerequisite\_node is null THEN

DISPLAY "Error: Prerequisite not found"

END PROGRAM

END IF

ADD\_CHILD(course\_node, prerequisite\_node)

END FOR

END IF

ADD\_NODE(course\_node)

END FOR

CLOSE course\_file

END

1. Create course objects and store in the data structure:

Create an empty vector to store the course objects.

Open the input file containing course data.

For each line in the file: (using loop)

a. Read in the line and split it into tokens using the comma as a delimiter.

b. Create the new course object.

c. Set the courseNumber instance variable of the course object to the first token.

d. Set the name instance variable of the course object to the second token.

e. For each subsequent token in the line, add it as a prerequisite to the course object by appending it to the vector of prerequisites.

f. Add the course object to the vector of course objects.

Close the input file.

1. Pseudocode for print out of course information and the corresponding prerequisite courses:

function print\_course\_info(course):

print("Course Number: " + course.courseNumber)

print("Course Name: " + course.name)

if course.prerequisites is not empty:

print("Prerequisites:")

for prerequisite in course.prerequisites:

print(" Course Number: " + prerequisite.courseNumber)

print(" Course Name: " + prerequisite.name)

else:

print("This course has no prerequisites.")

return