Shane Doyle 2/4/23

Professor Thoma Milestone: Binary Search Tree Pseudocode

File Input

Declare an ifstream object inputFile

Open the input file

IF input file successfully opened

WHILE EOF is not reached

IF less than 2 parameters exist on a line

Return file format error

ELIF 2 parameters exist on line

READ in course number and course title values

ELSE

READ in course number, course title, and prerequisite values

IF prerequisite value(s) don’t exist in course file

Return file format error

Close file

Course Object Pseudocode

Declare new Binary Search Tree object bst

Declare root equal to nullptr

Declare new Course object course

Declare integer courseNumber

Declare string courseTitle

Declare vector <string> prerequistes

WHILE EOF is not reached

READ in courseNumber

READ in courseTitle

READ in prerequisites if any exist

Store courseNumber, courseTitle, and any prerequisites in course object

Call Insert(course)

Function Insert(Course course)

IF root equals nullptr

root equals new Node(course)

ELSE

Call addNode(root, course)

Function addNode(Node\* node, Course course)

IF course number is less than node course number

IF left child equals nullptr

Left child equals new node

ELSE

Call addNode(node points to left, course)

ELSE

IF right child equals nullptr

Right child equals new node

ELSE

Call addNode(node points to right, course)

Print Course Information Pseudocode

Function printCourseInformation(Tree<Course> courses, String courseNumber)

Declare current node equal to root

WHILE current node does NOT equal nullptr

IF current node matches

OUTPUT course information

ELIF course number is less than current node course number

Set current node equal to left

ELSE

Set current node equal to right