### Function: validateFile

START function: void validateFile(string filePath)

READ file at filePath

CREATE file parser

FOR all rows, r, in file

GET row size

IF row size is less than 2

OUTPUT course name and “ missing course name.”

ELSE IF row size is greater than 2

FOR each prerequisite, p

SET c to first course in file

WHILE c is not null

IF p’s ID matches c’s ID

BREAK from while loop

ELSE

SET c to next course

END IF

ELSE

OUTPUT “Prerequisite, p, not found in course catalog”

END WHILE

END FOR

END IF

END FOR

END function

### Function CreateCourse

START function createCourse(filePath)

CREATE file parser variable, fileParse

FOR each row, r in file

CREATE new course object, newCourse

SET rowSize variable equal to length of s

SET newCourse’s course ID equal to item 1 in r

SET newCourse’s course ID equal to item 2 in r

IF s > 2

FOR each item from positions 2 to s in r

APPEND item to newCourse’s prerequisite vector

END FOR

END IF

CREATE new node, newNode, with course, newCourse

IF root of courseBst (course binary search tree) is null:

SET the root equal to newNode

SET newNode’s left and right pointers to the null pointer

ELSE

CREATE new node, curNode and set equal to courseBst’s root

WHILE curNode is not null

IF (curNode’s course Id is greater than newNode’s course Id

IF curNode’s left node is null

SET curNode’s left node to newNode

SET curNode to null

ELSE

SET curNode to its left Node

END IF

ELSE

IF curNode’s right node is null

SET curNode’s right node to newNode

SET curNode to null

ELSE

SET curNode to curNode’s right node

END IF

END IF

END WHILE

SET newNode’s left node to null

SET newNode’s right node to null

END IF

END FOR

END function

### Function printCourseInformation

START function printCourse(string courseId)

CREATE new node pointer, curNode

WHILE curNode is not null

IF curNode’s course’s course Id is equal to courseId

PRINT course ID and description

IF curNode’s course’s prerequisite list is not null

FOR curPrereq in prerequisite vector

OUTPUT curPrereq’s course’s course ID

END FOR

END IF

RETURN

ELSE IF curNode’s course’s course Id is greater than courseId

SET curNode equal to its left node

ELSE

SET curNode equal to its right node

END IF

END WHILE

PRINT No course found with ID: courseID

END function printCourseInformation