GLOBAL DATA STRUCTURES STRUCT Course STRING courseNumber STRING title LIST<STRING>

VECTOR<Course>

CONST STRING FILE\_NAME = "ABCU\_Courses.txt"

PROCEDURE LoadAndValidateFile()

FILE inputFile

INTEGER lineNum ← 0

TRY

inputFile ← OPEN(FILE\_NAME, READ)

CATCH FileNotFoundException

PRINT "Error: File '" + FILE\_NAME + "' not found."

RETURN

END TRY

WHILE NOT EOF(inputFile) DO

STRING rawLine ← READLINE(inputFile)

lineNum ← lineNum + 1

STRING line ← TRIM(rawLine)

IF line = "" THEN CONTINUE

LIST<STRING> tokens ← SPLIT(line, ",")

IF LENGTH(tokens) < 2 THEN

PRINT "Format error on line " + lineNum + ": must have at least course number and title."

CONTINUE

END IF

FOR i ← 0 TO LENGTH(tokens) - 1 DO

tokens[i] ← TRIM(tokens[i])

END FOR

LIST<STRING> prereqs ← EMPTY\_LIST

FOR i ← 2 TO LENGTH(tokens) - 1 DO

prereqs.APPEND(tokens[i])

END FOR

Course c

c.courseNumber ← tokens[0]

c.title ← tokens[1]

c.prerequisites ← prereqs

courseVector.PUSH\_BACK(c)

END WHILE

CLOSE(inputFile)

SET<STRING> allCourseNumbers ← EMPTY\_SET

FOR EACH Course c IN courseVector DO

allCourseNumbers.INSERT(c.courseNumber)

END FOR

FOR EACH Course c IN courseVector DO

FOR EACH STRING prereq IN c.prerequisites DO

IF NOT allCourseNumbers.CONTAINS(prereq) THEN

PRINT "Validation error: prerequisite '" + prereq + "' for course " + c.courseNumber + " does not exist in file."

END IF

END FOR

END FOR

PROCEDURE PrintCourseInfo(STRING targetCourseNumber) BOOLEAN found ← FALSE

FOR EACH Course c IN courseVector DO

IF c.courseNumber = targetCourseNumber THEN

PRINT "Course Number: " + c.courseNumber

PRINT "Title: " + c.title

IF c.prerequisites.LENGTH = 0 THEN

PRINT "Prerequisites: None"

ELSE

PRINT "Prerequisites: " + JOIN(c.prerequisites, ", ")

END IF

found ← TRUE

BREAK

END IF

END FOR

IF NOT found THEN

PRINT "Course " + targetCourseNumber + " not found."

END IF