Jarrod Helmers

CS-300

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Module Three Milestone

BEGIN:

// Open the file and return the file handle

PROCEDURE OpenFile(filePath):

TRY:

OPEN file at filePath

IF file OPEN successful THEN

RETURN file handle

ELSE:

PRINT "Error: Unable to open file"

RETURN NULL

CATCH IOError:

PRINT "Error: File not found or unable to open"

RETURN NULL

END TRY

END PROCEDURE

// Parse the file line by line and create a list of course data

PROCEDURE ParseFile(fileHandle):

courseDataList = EMPTY LIST

FOR EACH line IN fileHandle:

IF line HAS AT LEAST TWO PARAMETERS THEN

courseDataList.APPEND line

ELSE:

PRINT "Error: Invalid line format, skipping line"

RETURN courseDataList

END PROCEDURE

// Check prerequisites for each course and create a map of course data

PROCEDURE CheckPrerequisites(courseDataList):

courseMap = EMPTY MAP

FOR EACH courseData IN courseDataList:

courseParams = SPLIT courseData BY COMMA

courseId = courseParams[0]

courseTitle = courseParams[1]

prerequisites = courseParams[2:]

// Check if prerequisites exist in the course map

FOR EACH prerequisite IN prerequisites:

IF prerequisite NOT IN courseMap KEYS THEN

PRINT "Error: Prerequisite", prerequisite, "not found"

REMOVE courseData FROM courseDataList

EXIT LOOP

// Add course data to the map

IF courseData NOT IN courseDataList THEN

CONTINUE TO NEXT courseData

courseMap[courseId] = (courseTitle, prerequisites)

RETURN courseMap

END PROCEDURE

// Search for a specific course in the course map

PROCEDURE SearchCourse(courseMap, courseId):

IF courseId IN courseMap KEYS THEN

PRINT "Course Found: ", courseId, courseMap[courseId]

ELSE:

PRINT "Error: Course not found"

END PROCEDURE

// Main function to orchestrate the execution

PROCEDURE Main():

fileHandle = OpenFile("course\_data.txt")

IF fileHandle IS NOT NULL THEN

courseDataList = ParseFile(fileHandle)

IF courseDataList IS NOT EMPTY THEN

courseMap = CheckPrerequisites(courseDataList)

IF courseMap IS NOT EMPTY THEN

SearchCourse(courseMap, "CS101")

END IF

END IF

END IF

END PROCEDURE

END.