Jarrod Helmers

CS-300

Dr. Webb

31 March, 2024

Module Four Milestone

// Function to open and read the file

OpenAndReadFile(file\_name):

try:

file = Open(file\_name, "read") // Open the file in read mode

return file // Return the file object

except FileError:

Print("Error: Unable to open or read file")

return null

// Function to validate the file format

ValidateFileFormat(file):

// Loop through each line in the file

for line in file:

course\_data = SplitLine(line) // Split the line into tokens

// Check for correct formatting

if len(course\_data) < 2:

Print("Error: Insufficient parameters in line ", line)

return false

// Check if prerequisites exist in the file

for prerequisite in course\_data[2:]:

if not ExistsInFile(prerequisite):

Print("Error: Prerequisite ", prerequisite, " not found for course ", course\_data[0])

return false

return true

// Function to load data into a hash table

LoadDataIntoHashTable(file):

hash\_table = CreateHashTable() // Create a hash table data structure

// Loop through each line in the file

for line in file:

course\_data = SplitLine(line) // Split the line into tokens

course\_number = course\_data[0]

course\_title = course\_data[1]

prerequisites = course\_data[2:]

// Create course object

course = CreateCourse(course\_number, course\_title, prerequisites)

hash\_table.insert(course\_number, course) // Insert course into hash table

return hash\_table // Return the hash table containing course data

// Function to split a line into tokens

SplitLine(line):

return Split(line, ",") // Split line by comma and return tokens

// Function to check if a course exists in the file

ExistsInFile(course\_number):

// Check if course\_number exists in the file

// Return true if found, false otherwise

// Function to create a course object

CreateCourse(course\_number, course\_title, prerequisites):

course = New CourseObject() // Create a new course object

course.course\_number = course\_number

course.course\_title = course\_title

course.prerequisites = prerequisites

return course

// Function to print course information from the hash table

PrintCourseInfo(hash\_table):

// Loop through each bucket in the hash table

for bucket in hash\_table:

// Loop through each course object in the bucket

for course in bucket:

Print("Course Number: ", course.course\_number)

Print("Course Title: ", course.course\_title)

Print("Prerequisites: ", course.prerequisites)

Print("\n") // Print a new line after each course