**CS 300 Project One Milestone One**

Student Name

Date

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**Pseudocode 1:** Define how the program opens the file, reads the data, parses each line, and checks for format errors.

| void readFile(String filename) {  Open file with name filename  Initialize an empty Vector<Course> coursesList  Initialize an empty Set<String> courseNumbers  // First pass: Read and store course numbers  for each line in file  Split the line using comma as delimiter  if number of tokens < 2  Print "Error: Invalid file format on line: " + line  Close file  Return empty Vector    Extract courseNumber from first token  Add courseNumber to courseNumbers set  Close file  // Second pass: Read file again to validate prerequisites  Open file with name filename  for each line in file  Split the line using comma as delimiter  Extract courseNumber and courseName from tokens  Initialize an empty Vector<String> prerequisites  if there are additional tokens  for each token after the second one  if token is not in courseNumbers  Print "Error: Prerequisite " + token + " for course " + courseNumber + " does not exist in file."  Close file  Return empty Vector  Add token to prerequisites vector  Create a Course object with courseNumber, courseName, and prerequisites  Add the Course object to coursesList  Close file  Return coursesList  } |
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**Pseudocode 2:** Show how to create course objects and store them in the appropriate data structure.

| // Course structure  Structure Course {  String courseNumber  String courseName  Vector<String> prerequisites  }  // Read the file, create Course objects, and store them in a vector  void loadCourses(String filename) {  Open file with name filename  Initialize an empty Vector<Course> coursesList  for each line in file  Split the line using comma as delimiter  Extract courseNumber from first token  Extract courseName from second token  Initialize an empty Vector<String> prerequisites    if there are additional tokens  for each remaining token in the line  Add token to prerequisites vector  Create a Course object with courseNumber, courseName, and prerequisites  Add the Course object to coursesList  Close file  Return coursesList  } |
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**Pseudocode 3:** Search the data structure for a specific course and print out course information and prerequisites.

| void searchCourse(Vector<Course> courses, String courseNumber) {  for each course in courses  if course.courseNumber == courseNumber  Print "Course Number: " + course.courseNumber  Print "Course Name: " + course.courseName  if course.prerequisites is not empty  Print "Prerequisites: "  for each prerequisite in course.prerequisites  Print prerequisite  else  Print "No prerequisites"  Return  Print "Course not found"  } |
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