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SNHU CS-300

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**Module 5 Milestone: Pseudocode for ABCU Project One**

1. **Load Required Libraries**
   1. Import necessary text parsing libraries and headers.
2. **Define Course Structure**
   1. Create a structure named Course.
   2. Include courseID, courseName, preCount, and preList.
   3. Initialize default values for all attributes.
3. **Define BinaryTree Class**
   1. Create a class named BinaryTree.
   2. Inside the class, define a Node structure containing:
      1. A Course object.
      2. Left and right pointers.
   3. Define a root node.
   4. Include methods for printing a course and constructing the tree.
4. **Main Function**
   1. Create an instance of BinaryTree named courseTree.
   2. Get the file path from the user.
   3. If no input is given, use a default file path.
   4. Call txtParser() to process the file and store data in courseTree.
   5. Call validateList() to check course prerequisites.
   6. Get user input for a course search.
   7. Call printCourse() with user input.
   8. Exit program.
5. **Text Parsing Function (txtParser)**
   1. Open the CSV file using the given file path.
   2. Loop through each row until the end of the file.
   3. Extract courseID and courseName.
   4. Loop through remaining columns to collect prerequisites.
   5. Store prerequisite count and names in a Course structure.
   6. Insert the course into the BinaryTree.
6. **Course Search Function (searchList)**
   1. Start at the root node.
   2. Traverse the tree by comparing courseID values.
   3. If a match is found, return the course.
   4. If no match is found, return an empty Course structure.
7. **Print Course Function (printCourse)**
   1. Start at the root node.
   2. Traverse the tree to locate the courseID.
   3. If found, print courseID, courseName, and prerequisites.
   4. If not found, display an error message.
8. **Validate Course List Function (validateList)**
   1. Loop through all courses in the BinaryTree.
   2. For each course, check that all prerequisites exist in the tree.
   3. If a prerequisite is missing, set validation to false.
   4. Return the validation result.

End of Pseudocode.