

Discrete programming assignment #1

Background: A research group has created an on-line training program that consists of 6 chapters. For each chapter, the user is required to read a .pdf file (OverView), watch a training video (Movie), read some articles (Articles), look at some clinical tools (Clinical), go through a FAQ document (FAQ), read some case studies (Case) and take a quiz (Quiz). If they have completed any of these components, a date is recorded. Quiz scores have been recorded, and quiz answers have also been stored. If they have completed all of the components for a chapter, the value for the variable "Complete" will be "YES", and if any component is missing, the value for the variable "Complete" will be "NO".

If a user has completed all 6 modules, they are eligible to receive a certificate. If they are missing any one of the components of any one of the modules, they cannot receive credit. The data for each user is organized as follows:

Name

Chapter XXXXX

ALL data for Chapter XXXXX, not in any specific order, but all components are listed...somewhere in this section is the following : Complete: YES or Complete: NO

ChapterDone

Chapter XXXXX

ALL data for Chapter XXXXX, not in any specific order, but all components are listed...somewhere in this section is the following : Complete: YES or Complete: NO

ChapterDone

Chapter XXXXX

ALL data for Chapter XXXXX, not in any specific order, but all components are listed...somewhere in this section is the following : Complete: YES or Complete: NO

ChapterDone

Chapter XXXXX

ALL data for Chapter XXXXX, not in any specific order, but all components are listed...somewhere in this section is the following : Complete: YES or Complete: NO

ChapterDone

Chapter XXXXX

ALL data for Chapter XXXXX, not in any specific order, but all components are listed...somewhere in this section is the following : Complete: YES or Complete: NO

ChapterDone

Chapter XXXXX

ALL data for Chapter XXXXX, not in any specific order, but all components are listed...somewhere in this section is the following : Complete: YES or Complete: NO

ChapterDone

UserDone

The chapters are not in order, and the modules within each chapter are not in order, or in the same order from module to module. Also, the number of lines for each chapter is not constant. The only

thing that is consistent is that the start of a block includes the word "Chapter" along with a number, and every chapter ends with the text "ChapterDone". Every block for a user starts with the user name, and ends with the text "UserDone". Each user will have information pertaining to all 6 modules (no missing blocks of information).

Your task is to write a program that reads a text file containing data related to a group of users, and determines if any of the users have completed the training and can earn a certificate. I will provide a text file containing some sample data for you to test your program.

How does this relate to discrete structures? Chapter 1 in our textbook discusses logic and reasoning. With this problem, you need to establish the logic for how to determine if a user has earned a certificate (and implement this logic). You have enough data to do in-depth analysis on the users, but at this point you are focusing on one simple component: has a user earned a certificate? You need to think about the information contained that is related to this problem, and ignore the irrelevant data. Because the number of lines related to each module is not consistent, you will need to come up with a strategy to automate checking the status of each user without relying on a simple iterative process.

Here is an example of the data for a single user (clearly this user has not earned a certificate)...notice that Chapter 1 is complete, and has dates for the various components. Chapter 2 has had some progress, but is not complete, and Chapter 5 has not been attempted, so there are no dates:

Average Joe
Chapter4
OverView: NO
Case: NO
FAQ: NO
FakeScore: 0
Movie: NO
Articles: NO
Clinical: NO
Complete: NO
QuizScore: 0
ChapterDone
Chapter3
OverView: NO
Case: NO
FAQ: NO
FakeScore: 0
Movie: NO
Articles: NO
Clinical: NO
Complete: NO
QuizScore: 0

ChapterDone
Chapter2
Clinical: YES
Articles: YES
Complete: NO
ClinicalDate: 2012-07-05 01:01:51 PM
CaseDate: 2012-07-10 11:34:56 AM
OverViewDate: 2012-07-05 02:25:23 PM
FAQDate: 2012-07-10 11:35:18 AM
MovieDate: 2012-07-27 10:24:23 AM
ArticlesDate: 2012-07-05 01:44:43 PM
OverView: YES
QuizScore: 0
FAQ: YES
Movie: YES
FakeScore: 0
Case: YES
ChapterDone
Chapter6
OverView: NO
Case: NO
FAQ: NO
FakeScore: 0
Movie: NO
Articles: NO
Clinical: NO
Complete: NO
QuizScore: 0
ChapterDone
Chapter1
Clinical: YES
Articles: YES
Complete: YES
ClinicalDate: 2012-07-05 09:10:59 AM
CaseDate: 2012-07-05 09:10:58 AM
OverViewDate: 2012-07-05 09:27:48 AM
QuizAnswers: 11101
FAQDate: 2012-07-05 09:10:52 AM
MovieDate: 2012-07-05 10:04:01 AM
QuizDate: 2012-07-05 01:01:44 PM
ArticlesDate: 2012-07-05 09:10:46 AM
OverView: YES

QuizScore: 4

StartDate: 2012-07-05 12:59:44 PM

FAQ: YES

Movie: YES

FakeScore: 5

Case: YES

ChapterDone

Chapter5

OverView: NO

Case: NO

FAQ: NO

FakeScore: 0

Movie: NO

Articles: NO

Clinical: NO

Complete: NO

QuizScore: 0

ChapterDone

UserDone