CS408 Project 2

Goal: Compare features of 4 major programming languages by writing and executing programs and scripts of identical specification in these different languages.

Languages: 1 scripting languages: Bourne shell or C shell; 2 hybrid languages: Java and Perl; 1 compiled language: C++

Program 1 specification:
Input: A file of records containing information of your appointments for any days in the calendar year 2011. The information in the record will be the month, date, day, time (from and to) and lastly the appointment specification as a string.
e.g., a sample record could be like:
January:24:Monday:16.00-17.30:Dentist visit
In the above record, I have separated the fields by a colon but you can choose whatever field delimiter you wish. You can choose a different format for the data in the file as well but it has to be a text file and it has to be the same file format used by all your 4 programs in the different languages. The menu shown to the user should be as follows:

1. Add entry in the calendar
2. Remove entry from calendar
3. Modify entry in calendar
4. View entry by date or keyword
5. View calendar for the entire week or month
6. Exit

Please provide a sample calendar text file (with at least 10 entries in it) with your program executable for me to use since different students will choose different data formats. This program is a command line tool and doesn't require a user interface in any language.

Other suggestions

- Feel free to add any other field(s) that you might think is/are important for you to have in a calendar.
- You can also add more menu options (functionality) as desired other than the ones mentioned above.

Program 2 Specifications:
Write a program/script similar to the ones used in ATM machines. Essentially your program is to handle a person's savings and checking accounts and should handle the following services:

Transfer from savings account to checking account
Transfer form checking account to savings account
Cash withdrawal from either account
Balance statements for both the accounts

Assume that the ATM machine recognizes a unique 3-digit personal identification number (PIN). In your initial screen you are to first ask the user to type in his/her PIN as follows:

*** Welcome to Cal Poly's ATM ****

Please enter your PIN:

In response to this, the user has to enter a valid PIN. Assume that the only legal PIN is:

111

If any number besides this PIN is entered, the screen is to be cleared and the same screen to be redisplayed. The user then gets a second chance to enter a valid PIN. If an illegal PIN is entered three consecutive, the following message:

Too many illegal PINs. Try later again.

should appear on the screen and your program must terminate.
If the entered PIN is a legal value, the main menu is to be displayed as follows:

*** Welcome To Cal Poly's ATM System ***

(1) Transfer from checking account to savings account
(2) Transfer from savings account to checking account
(3) Savings account balance
(4) Checking account balance
(5) Withdraw Cash from either account
(6) Exit
==> Please select option (1-6):

The following are some of the guidelines you should follow:

-- The main menu is to continue to be displayed until user selects
option 6. At this point a message such as

Thank you for using the ATM system.

should appear and your program execution is to be terminated.

-- Users have to select options 1, 2, 3, 4, 5 or 6. Redisplay the menu if any number
outside the range 1 to 6 is entered. Also clear the screen everytime the menu is shown again.
-- Withdrawl (selection 5) should ask wether the user wants to withdraw from
checking account or saving account and should subtract the amount specified
from the appropriate account.
-- Savings and checking accounts both have initial balance of $1000.00
-- Any transfer is allowed only if it can be honored. For example, if the savings account balance is $500.00 and the user requests to transfer $550.00 from that savings account to the checking account an appropriate message such as

"Transasction not completed"

should be displayed and the current balance of that account should be printed. The screen is to be cleared and the main menu to be displayed.
-- Use functions to accomplish various tasks in the menu if the language has the feature to create functions.

Programming considerations

- Properly document both your programs/scripts by having ample comments throughout the different parts of it.

Submission

- Write-up: Comparative analysis using the language evaluation criteria of readability, writability and reliability. Include the comparison of program complexity and the size of source code as well.
- Source code print outs for all the languages used.
- Sample text file print out that you used.
- Include the source code files and executables as well as the text data file (whether you have used my data file format or created your own with your initial record data). I would prefer and appreciate receiving the files on a CD/ USB flash drive.

Due Date

March 12, Tuesday in class
Each language project is worth 5% (2.5% for each program in each language)
The detailed report is also 5% (Write this from the collective experience gained in writing these 8 programs)
Total Project: 25%

Warning

Please don't copy or plagiarize in any way. Both students will fail the course (not just the project) if found to have similar scripts/programs. Also, this is not a group project, so please don't work together. I will give you partial credit for incomplete projects. So, be honest to yourself.