**Homework #2 (Due Sep 3 11:59 PM)**

IST 3420 - Fall 2017, Chen

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Suppose you are software developer. You are asked by a university library to write an interactive R program to calculate the loan period for materials borrowed from the library. The library staff provides you a table (see below) which illustrates the rule for loan period calculation.

|  |  |  |
| --- | --- | --- |
| Borrower | Material | Loan Period |
| Student | Book | 4 weeks |
| CD | 1 week |
| Faculty | Book | 6 months |
| CD | 2 weeks |
| Other | Book | 2 weeks |
|  | CD | 1 week |

The program shall read user input for the borrowing information including borrower type and the type of materials to borrow. Then the program shall display the loan period to the user.

Below are two samples of running the program. Text in yellow shape is user input.

Sample 1:

Enter the type of borrower (Student/Faculty/Other): Student

Enter the type of materials to borrow (Book/CD): Book

You can borrow books for 4 weeks.

Sample 2:

Enter the type of borrower (Student/Faculty/Other): Faculty

Enter the type of materials to borrow (Book/CD): CD

You can borrow CDs for 2 weeks.

Paste your code in the following box:

|  |
| --- |
| # Name: Adam Forestier  # Class: IST 3420  # Assingment: Homework 2  # Due Date: September3, 2017  # Clear data and values  rm(list = ls())  # Lengths of times people are permitted to rent books/cds  rent\_time <- c("4 weeks.", "1 week.", "6 months.", "2 weeks.", "2 weeks.", "1 week.")  # Creates Matrix from rent\_time data  rent\_matrix <- matrix(rent\_time, ncol = 2, byrow = TRUE)  # Renames row names and columns  rownames(rent\_matrix) <- c("Student", "Teacher", "Other")  colnames(rent\_matrix) <- c("Book", "CD")  # Displays matrix with information  rent\_matrix  # Allows user to enter  borrower\_type <- ""  rented\_item <- ""  while (borrower\_type != "student" && borrower\_type != "faculty" && borrower\_type != "other")  {  borrower\_type <- readline("Enter the type of borrower (Student/Faculty/Other): ")  # Allows user to enter borrower type with upper or lower case first letter  borrower\_type <- tolower(borrower\_type)  }  while(rented\_item != "book" && rented\_item != "cd")  {  rented\_item <- readline("Enter the type of materials to borrow (Book/CD) ")  # Allows user to enter borrower type with upper or lower case first letter  rented\_item <- tolower(rented\_item)  }  item\_columns <- switch(rented\_item, "book" = 1, "cd" = 2)  borrower\_rows <- switch(borrower\_type, "student" = 1, "faculty" = 2, "other" = 3)  print(paste("You can borrow a", rented\_item, "for", rent\_matrix[borrower\_rows, item\_columns])) |

**Submit this document to Canvas prior the deadline.**