CSCI 1320 Computer Science I: Engineering Applications – Fall 2018
Instructor: Zagrodzki
Lab 3
Due Friday, September 28, by 6pm

Clock Function

Write a program that asks the user to enter time of day. The program will convert from 12-hour format to the 24-hour format, or vice-versa. **First write out your strategy as pseudocode in a .txt file. Include the inputs/outputs you expect each function to have.** Here are the program specs:

1. Ask for an input of hour, minute, and seconds.
2. Then ask the user if the time entered was in the 24-hour or 12-hour format.
    a. If the user responds with 12-hour, ask whether entered time was AM or PM. Otherwise, ask no more questions.
3. Convert the time to the other time format (If user entered in 12-hr format, convert to 24-hr format. If user entered in 24-hr format, convert to 12-hr format.)
4. Check each of the user entries to ensure they are in the appropriate range. For example, none of the values should be negative, minutes should be in the range of 0 to 60, if user indicated 12-hour clock then value should be b/w 1 and 12, etc.. If any entry is incorrect, use *error*() functions to display meaningful messages for each error situation(these functions will also end the program execution).
5. Display the converted time stating clearly the new format.
6. Modularize your code. Remember that in MATLAB you can have functions with multiple inputs and/or outputs. (Sections 6.1 and 6.2 in the text.)
    a. Have a function that takes in all the inputs for part 2. Your error checking should be implemented within this function. (getInputs)
    b. Have a conversion function for part 3. (convertTime)
    c. Have a display function for part 4. (displayTime)

Sample inputs and outputs

```
Enter Hour: 10
Enter Minutes: 10
Enter Seconds: 10
Enter Time Format(12/24): 12
Time in AM or PM (am/pm): am
Time in 24 hour format is: 10:10:10
```

```
Enter Hour: 10
Enter Minutes: 10
Enter Seconds: 10
Enter Time Format(12/24): 12
Time in AM or PM (am/pm): pm
Time in 24 hour format is: 22:10:10

Enter Hour: 18
Enter Minutes: 10
Enter Seconds: 10
Enter Time Format(12/24): 24
Time in 12 hour format is: 06:10:10 PM

Enter Hour: 10
Enter Minutes: 10
Enter Seconds: 10
Enter Time Format(12/24): 24
Time in 12 hour format is: 10:10:10 AM

Enter Hour: 20
Enter Minutes: 10
Enter Seconds: 10
Enter Time Format(12/24): 12
Time in AM or PM (am/pm): am
Hour value is invalid!

Enter Hour: 20
Enter Minutes: 100
Enter Seconds: 10
Enter Time Format(12/24): 24
Minutes value is invalid!

Enter Hour: 20
Enter Minutes: 10
Enter Seconds: 100
Enter Time Format(12/24): 24
Seconds value is invalid!

Enter Hour: 20
Enter Minutes: 10
Enter Seconds: 10
Enter Time Format(12/24): 67
Format value is invalid!
```

Submitting the assignment:
Make sure your function file is well commented and it includes in the header your name, student ID, course number, lab number and recitation section. If you finish the function in recitation, you can show your code and then demonstrate it to your TA. Zip and submit the text and *.m* files through Moodle as Lab 3 by due date.