COMP1200-MatLab - Lab 09
Due midnight – Thursday – November 10
Submit `gameResults2011.xls` and `Lab09.m` **via Blackboard**

Before you start writing your program:

Read all of these instructions carefully. Submitting a development plan is not required for this assignment. I suggest that you create one and use it when writing your program.

TRY USING `xlsread()` EARLY ON YOUR MAC.
MAC USERS MAY NOT BE ABLE TO USE THIS COMMAND. USE A LAB COMPUTER, INSTEAD.

***Problem*:**

NOTE: Your submitted file(s) MUST be spelled and cased as instructed. [-5 points per file for not doing so.]

***Program*: Lab09.m**

Print a report of the Auburn 2011 football season game results. The result statistics are saved in `gameResults2011.xls`.

Instructions:

- ☐ Insert comments at the top and throughout each file
  - Include the follow comments at the beginning of this (and ALL) files.
    - % your name
    - % assignment number
    - % date you completed the assignment
    - % a short narrative about what the file does

  -5 points per file for absence of any of these required comments at the top
  - Use your development plan as a guide for comments throughout each file
- ☐ Use `clc` and `clear all` at the beginning of your program.
- ☐ Use descriptive variable names.
- ☐ Use Sample Input/Output as a guide.
- ☐ No extra output, i.e., use semicolons!
- ☐ Use **Smart Indent** to ensure correct indenting.

- ☐ Using the data file
  - Protect your program from crashing by making sure that the file exists. If the file doesn't exist, print an error message and end the program.

- ☐ CONSTANT variables
  - Save the name of the file in a **CONSTANT** variable name; use the variable name as the argument with the **`xlsread()`**.

- ☐ Input
  - Read the Auburn 2011 season game results from `gameResults2011.xls`
  - There are eight columns of data in the data file. Not all are numbers.
    1 - SEC, 2 - Date, 3 - Away, 4 - Opponent, 4 - AU Score,
    5 - Opp Score, 6 - Minutes, 7 - Attend
  - Read the data into a numeric and a text matrix. Note the difference and relationship of the number of rows in the two matrixes.
  - Your program should work for any number of games in the file. Use **size** obtain the number of games (rows) and columns.

- ☐ Computation
  - Find the longest game time. Game time = 3 hours + the fraction of an hour obtained from the minutes column.
  - Find the largest game attendance.
  - Find the largest win and loss point spread and the index of the game in which it occurred. (Point spread is the difference between the Auburn and opponent score.)

New commands
`xlsread()`
cell array `{}`
`strcmp()`

Revisit
`exist()`
`for loop`
`size()`
`fprintf()`
`if..else`
`max()` with one & two outputs
matrix element indexes
CONSTANT variable

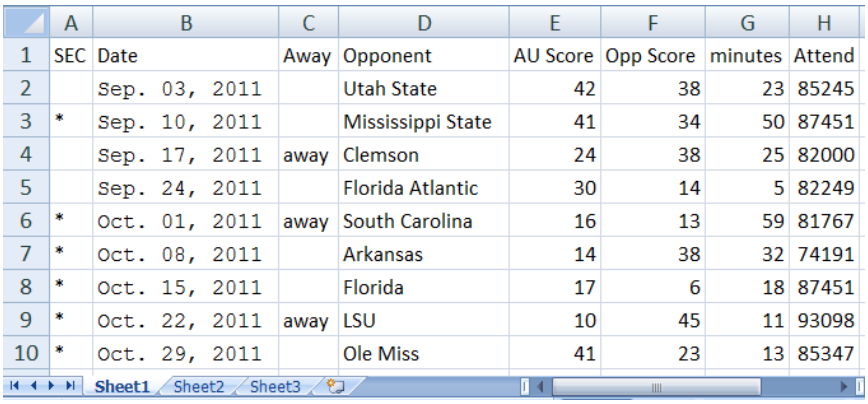
☐ Output

- Refer to the Sample Output for the information that should be included in the report.
  - Include the titles and column headings. NOTE: the "as of" date should be obtained from the last game date in the spreadsheet.
  - MULTIPLE `fprintf()`s CAN BE USED TO PRINT ONE LINE.
  - Depending on whether Auburn wins or loses, print 'W' or 'L'.
  - Print a flag '^' next to the time equal to the largest time else print a space.
  - Print a flag '#' next to the attendance equal to+ the largest attendance else print a space.
- Print a legend that indentifies the flags in the report.
- Print the largest win and loss point spread with the date and opponent of the game.

☐ Printing

- Use **fprintf** for all output.
- Use two decimal places for time
- Print other numbers with no decimal places
- Column numbers **right-justified**, i.e., right-aligned
- Use `%-20s` to print the Opponents' name.
  The **negative sign** will print the name **left-justified**.

Sample Input/Output:



	A	B	C	D	E	F	G	H
1	SEC	Date	Away	Opponent	AU Score	Opp Score	minutes	Attend
2		Sep. 03, 2011		Utah State	42	38	23	85245
3	*	Sep. 10, 2011		Mississippi State	41	34	50	87451
4		Sep. 17, 2011	away	Clemson	24	38	25	82000
5		Sep. 24, 2011		Florida Atlantic	30	14	5	82249
6	*	Oct. 01, 2011	away	South Carolina	16	13	59	81767
7	*	Oct. 08, 2011		Arkansas	14	38	32	74191
8	*	Oct. 15, 2011		Florida	17	6	18	87451
9	*	Oct. 22, 2011	away	LSU	10	45	11	93098
10	*	Oct. 29, 2011		Ole Miss	41	23	13	85347

Sheet1 Sheet2 Sheet3

```
                    2011 AUBURN TIGERS
              Auburn Games Results (as of Oct. 29, 2011)

  Date             Opponent             Score W-L Time  Attend
  -------------    -------------------- ----- --- ----  ------
  Sep. 03, 2011    Utah State           42-38  W  3.38  85245
* Sep. 10, 2011    Mississippi State    41-34  W  3.83  87451
  Sep. 17, 2011 at Clemson              24-38  L  3.42  82000
  Sep. 24, 2011    Florida Atlantic     30-14  W  3.08  82249
* Oct. 01, 2011 at South Carolina       16-13  W  3.98^ 81767
* Oct. 08, 2011    Arkansas             14-38  L  3.53  74191
* Oct. 15, 2011    Florida              17-06  W  3.30  87451
* Oct. 22, 2011 at LSU                  10-45  L  3.18  93098#
* Oct. 29, 2011    Ole Miss             41-23  W  3.22  85347
  * SEC conference game
  ^ longest game
  # largest game attendance

Largest point spread:
Win:  18 on Oct. 29, 2011 against Ole Miss
Loss: 35 on Oct. 22, 2011 against LSU
```

Submit via Blackboard:

`Lab09.m`	MATLAB script file
`gameResults2011.xls`	Data file