Name: _____ Section: _____

Exam3 Part1. Spring 2015. A little Energy Engineering…

NO QUESTIONS ASKED during exam.
Open Notes. Open MATLAB. NO google.

(_____/30pts) Complete the 30MC questions online. You may use your notes and MATLAB, but keep in mind you have 30minutes only and most questions can't be copy/pasted… DO NOT RUSH!

(_____/45pts) Over the two days, you are to create one program with one main and 2 functions. Today, you are responsible for only submitting the first function, and meet the requirements written below. The requirements for the main and for the second function will only be given to you Friday. Feel free to imagine in between the two days!

An excel sheet is provided **on ERNIE**, under the link 4. EXAM, where you will **submit the function file ONLY, NO zip**.

There is NO IF OR LOOPS IN THIS FUNCTION.

***Overall**:* This excel sheet has data for oil and gas wells per states for a good amount of years! The function definition is responsible for uploading the data, asking the user to select a state, and a year, and adding up how many gas wells and how many oil wells were in that state that year.

***Specifics**:*

(3pts) The function has no parameters.

(3pts) The function has 4 return values: the year picked (scalar), the state picked (a string), the total amount of gas wells that year in that state (scalar), the total amount of oil wells that year in that state (scalar).

(2pts) Full documentation expected.

Note that I will have you update this function in between the two days. **Please check your email/ernie tonight**. Feel free to ask for help from ANYONE this time ONCE THE EXAM IS OVER at 5pm!

***Requirements**:*

(3pts) The function uploads properly the data from the excel sheet. Hardcode the filename as there will be no other data file. (However, the content may change but the format will remain the same).

(3pts) It filters all the states available and (3pts) offers them in a `listdlg()` box. (2pts) No duplicates should appear. (2pts) The user should not be able to select multiple states. (2pts) The actual name of the state chosen must also be extracted, as it is one of the return values.

(2pts) Filter the years available for that state only. This will result in a numerical vector.
Again, no duplicates should appear (2pts). Store that result in a new vector. (3pts) You will then need to convert that new vector to a cell array using the function `num2cell()`. This will provide the options for the `menu()` box (3pts) that lets the user pick the year. Use the index return value of `menu()` to also extract the actual year selected (3pts). KEEP THIS SIMPLE (5lines)

(*If you get stuck here, comment all and just hardcode a year. THEN move on.)*

(3pts) Once the user has selected the year from the menu, slice again the data so you filter out the column of oil wells specific to that state and year. (2pts) Add them all up to obtain the total amount of oil wells.

(2pts) Similarly, slice the data so you filter out the column of gas wells this time. (2pts) Add them all up to obtain the total amount of gas wells.