Name: Economic effects of solar energy production and consumption Group 8

Task Solving				
Task #1				
Input	Output	Intermediate Values	Method	Justification for Change
The goal of my function is to focus on giving information and data to the solar energy companies in order to help create ideal investments in solar energy infrastructure depending on the state the company wishes to build and sell solar energy. The inputs for my function will be StateID,EPCCost, and DevelopmentCost.	The outputsfor my function will be total cost, StateDevCost, StateEPCCost, CheapestDevCosts, CheapestEPCCosts, MostExpensiveDevCosts , MostExpensive, and EPCCosts for building solar energy in the selected state .	There are no intermediate values for my function	The methods I will use for my code will be simple like min, max, find, and an indivudal function called Price Finder that will find the price it costs to build solar panels for a state selected by the user.	The reason I changed my code was I found a more ideal data set that would work with my function better so I used the new data set and had to add new inputs and outputs to my created main script and function to fit the new data.
Task #2				
Input	Output	Intermediate Values	Method	
the inputs for this function will be average pricing of gas, coal powered, nuclear, and solar energy per kilo-Watt; house and area specification and will compare these to show the energy source that can be cheapest and most environmentally friendly in the long run.	the function will output the cheapest energy source and will help users make informed decisions about their homes energy.	N/A	The method will use simple min, max, arithmetic operations, vector and matrix concatenations, to show the overall cost for an average household with different energy sources.	
Task #3				
Input	Output	Intermediate Values	Method	
A input for my function would be: 1) Year, 2)Type of Energy, 3)Country.	My function would output the TWh generated for the country,energy and year chosen.	For my function there are no intermediate values.	Using if statements and simple built in matlab functions to pull out and the display the data chosen.	
Task #4				
Input	Output	Intermediate Values	Method	
year: Vector of Years corresponding to Consumption values. This vector is taken from excel Data in the main script. **consumption:** Vector containing values for US consumption of solar energy for each year (Measured in [TWh]). This vector is taken from excel Data in the main script. **prediction:** how many years in the future my exponential function will calculate. Obtained from the menu.	**newYearData:** copy of data from 'year' input, but appends 'prediction' more years after it. **expData:** Data containing values calculated from the exponential formula, measured in [TWh] **r2 :** R^2 value, how strongly exponential data and consumption data correlate.	**i, num2Zeros:** counting vars for exp equation: **n:** num of years, Pn: end amount, **P0:** starting amount, **r:** measure of growth	0) Check Assumptions 1) initiate vectors 2) Calculate r 3) Calculate new values using exponential equation 4) Calculate r^2 using equation	Update Description on inputs outputs. Add new Intermediate values
Task #5				
Input	Output	Intermediate Values	Method	

My function will outpou the max, min, average in a range of 20 years. TwentyYears;PricesYear Solar-pv-prices.csv	TwentyYearsPrice ChoosenYear NewData PricesYear LowestPrice Max Min Avg HighestPrice	Years Prices TwentyYearsNum c	load the data . create a list for years create a list for prices select the last 20 years from the list select the corresponding prices convert the years to string allow the user to review the prices by choosing from the menu Create the user to select a year from menu create a while loop to validate selection Error if not selection was made Create a new array for Location with the values found Save choosen value sto a new variable Price, ChoosenYear outpout the price and choosen year to the command window create a new vector to join data Use PriceperYear user function Outpout the results to the command window Plot prices vs years	I change my code to display the change in price in a twenty year period , and I also outpout the highest and lowest price during a twenty years period

Checkpoint 2

General Information
Equations Needed
Task 4: Pn = P0(1+r)^n R^2 = 1 - ((error Line)^2 - (error mean)^2)
Commands Needed
Min, Max, Find, Sum, Mean, Logicals, fprintf,menu, input, save, load min max load xlsread fprintf plot title xlabel ylabel grid while if error
Functions Needed
Price Finder updateConsumption TWh_Generated PriceperYear
General Questions

How is our reliance on solar energy changing? Is solar energy becoming cheaper with the federal tax credits given in 2020 and 2021?