

Name: Economic effects of solar energy production and consumption	Group 8	Checkpoint 3			General Information
Task #1: Mayram					Equations Needed
Input	Output	Intermediate Values	Method	Justification for Change	
My function will output the max, min, average in a range of 20 years. TwentyYears;PricesYear Solar-pv-prices.csv	TwentyYearsPrice ChooosenYear 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, ChooosenYear output the price and choosen year to the command window create a new vector to join data Use PriceperYear user function Output 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 output the highest and lowest price during a twenty years period	Task 4: $P_n = P_0(1+r)^n$ $R^2 = 1 - ((\text{error Line})^2 - (\text{error mean})^2)$
Task #2: Ethan					Commands Needed
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.	Min, Max, Find, Sum, Mean, Logicals,fprintf, menu, input, save, load min max load xlsread fprintf plot title xlabel ylabel grid while if error
Task #3: Preston					Functions Needed
Input	Output	Intermediate Values	Method	Justification for Change	
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	Price Finder updateConsumption TWh_Generated PriceperYear; FifteenYearStatistics
TASK #4: Diego					
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 #5: Jaskaran					General Questions
Input	Output	Intermediate Values	Method		

<p>The inputs for this function will be the standard electric cost in (cents per kWh) for a household in the specified state and the other input will be the initial cost in dollars (\$) of installing a solar energy system necessary to meet the energy needs of the household.</p>	<p>the function will output the savings and profit that result from switching to solar energy over a 15 year time period which will help users make informed decisions about their homes energy.</p>	<p>Powerusage by the house (in kWh) ; US State ; Number of peak sun hours in State; Solar System Capacity require to meet energy needs(in kW);</p>	<p>1)Have the user select their state of choice using menu statement and then take the index to output an idea of the cost of an average solar system. Have a data validation that ensures the user selects a state and doesn't exit the menu. 2) Have the user enter their monthly energy consumption and give them the cost of standard electricity. 3) Calculate the minimum solar system capacity needed to meet the household energy needs using the average peak sunlight hours and present a cost for the system 4) Calculate the breakeven point; savings and profit of switching to solar over a 15 year time period.</p>	<p>changed my code because i found better data sets and inputs and outputs had to be changed accordingly. Also had to find additional data sets like peak sunlight hours by state to find an accurate solar capacity needed to support the energy needs of the house. Needed appropriate data validations as well.</p>	<p>How is our reliance on solar energy changing? Is solar energy becoming cheaper with the federal tax credits given in 2020 and 2021? Does it make sense for a common household to consider making the switch to solar energy?</p>
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