Problem Set – More on Functions

1. Prompt the user to repeatedly to do the program(input (Yes or No)). If they respond Yes, go into the loop and prompt them for last name, month and sales. Write a function to compute next month's forecast. Pass to the function month and sales. Determine the forecast percent (see below) and compute next month's sales to be sales x (1+forecast percent). Return next month's sales and display the value.

Input	Process	Output

responce	Get responce
	If "Yes"
	  Proceed with program
	  If "No"
	    End Program	

lastname	Get lastname	

month	Get month
	If month = "Jan", "feb", or "Mar"
	  For_per = .10
	If month = "Apr", "May", or "Jun"
	  For_per = .15
	If month = "Jul", "Aug", or "Sep"
	  For_per = .20
	If month = "Oct", "Nov", or "Dec"
	  For_per = .25
	
	Nms = sales * (1 + for_per)
		Lastname
		nms

sales		
	Display lastname, nms,	

	Get responce
	If "Yes"
	  Proceed with program
	  If "No"
	    End Program	

Month	Forecast Percent
Jan, Feb, Mar	0.10
Apr, May, Jun	0.15
Jul, Aug, Sep	0.20
Oct, Nov, Dec	0.25

2. Prompt the user to repeatedly to do the program(input (Yes or No)). If they response Yes go into the loop and prompt the user for length, width and height of a room. Write a function to compute the square footage of the room. The function should receive the length, width and height of the room and return square footage (2 x length x width (floor and ceiling) + 2 x length x height (2 of the walls) + 2 x width x height (the other 2 walls). A gallon of paint covers 50 square feet. Compute the number of gallons needed to paint the room (square footage of the room / 50). Display the number of gallons needed.

Input	Process	Output

responce	Get responce
	If "Yes"
	  Proceed with program
	  If "No"
	    End Program	

lenght	Get length, width, height Room_sqf = 2 * length * width + 2 * length * height + 2 * width * heigth	covrg
width	Paint = 50 Covrg = Room_sqf / paint Round covrg to next number	
height	Display covrg	

	Get responce
	If "Yes"
	  Proceed with program
	  If "No"
	    End Program	

3. Prompt the user to repeatedly to do the program (input (Yes or No)). If they response Yes go into the loop and prompt the user for make, model, electric vehicle code (Y or N) and MSRP (sticker price) of an automobile. Write a function to compute the out the door price. Pass to the function the MSRP, make, model and electric vehicle code. Determine the percent off the MSRP then compute the new MSRP and finally add 7% sales tax to the total. Return and display the total. Also sum all MSRP's and sum of all sales price of the cars (MSRP – discount + tax).

Input	Process	Output

responce	Get responce
	If "Yes"
	  Proceed with program
	  If "No"
	    End Program	

lenght	Get length, width, height Room_sqf = 2 * length * width + 2 * length * height + 2 * width * heigth	covrg
width	Paint = 50 Covrg = Room_sqf / paint Round covrg to next number	
height	Display covrg	

	Get responce
	If "Yes"
	  Proceed with program
	  If "No"
	    End Program	

To determine percent off MSRP	Percent off MSRP
Honda Accord	0.10
Toyota Rav4	0.15
All electric vehicles	0.30
All other vehicles	0.05

4. Prompt the user to repeatedly to do the program(input (Yes or No)). If they response Yes go into the loop and prompt the user for last name and miles from downtown Chicago. Write a function to compute the train ticket price. Pass to the function the miles from down town Chicago and determine the ticket price. Return the ticket price. Sum price of all tickets.

Input	Process	Output

responce	Get responce
	If "Yes"
	  Proceed with program
	  If "No"
	    End Program	

lastname	total = 0 Get miles If miles < 30 Tixcost = 12 If 20 < miles > 29 Tixcost = 10 If 10 < miles < 19 Tixcost = 8 Else Tixcost = 5 total = tixprice + total	total
Miles	Display total	

	Get responce
	If "Yes"
	  Proceed with program
	  If "No"
	    End Program	

Miles from Down Town Chicago	Ticket Price
30 or more	$12
20 to 29	$10
10 to 19	$8
All others	$5

5. Prompt the user to repeatedly to do the program(input (Yes or No)). If they response Yes go into the loop and prompt the user for county and market value of a home. Write a function to compute the assessed value. Pass to the function the county and market value. The function will determine the assessed value percent then compute and return the assessed value. (Multiple the market value by assessed value percent. Sum and display all market values and assessed values.

Input	Process	Output
responce	Get responce If "Yes" Proceed with program If "No" End Program	
county	Get county If county = "Cook" Avp = 9/10 If county = "DuPage" Avp = 8/10 If county = "McHenry" Avp = 75/100 If county = "Kane" Avp = 6/10 Else Avp = 7/10	Mar_value
mvoh	Get mvoh, apv mar_value = mvoh * apv	
	Get responce If "Yes" Proceed with program If "No" End Program	

County	Assessed Value Percent
Cook	0.90
DuPage	0.80
McHenry	0.75
Kane	0.60
All others	0.70