Problem Set – More on Functions

- 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.

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

Input	Process	Output

Affirm
Name
Month
sales
	affirm = input("Do you wish to run the program(y/n)? :")
	
	def CompForcastCalc(month, sales):
	  if month = "Jan" or month = "Feb" or month = "Mar"
	    forecast_percent = 0.10
	  elif month = "Apr" or month = "May" or month = "Jun"
	    forecast_percent = 0.15
	  elif month = "Jul" or month = "Aug" or month = "Sep"
	    forecast_percent = 0.20
	  else
	    forecast_percent = 0.25
	
	  nms = sales * (1 + forecast_percent)
	  return nms
	
	while affirm = y
	  lname = input("Enter the last name: ")
	  month = input("Enter the month: ")
	  sales = float(input("Enter the sales: "))
	  nms = CompForcastCalc(month, sales)
	  Display nms
	  affirm = input("Do you wish to run the program(y/n)? :")
		nms

- 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

Affirm
Length
Width
height
	def CompSqFtCalc(length, width, height):
	  sqft = (2 * length * width) + (2 * length * height) + (2 * width * height)
	  galreq = sqft / 50
	  return galreq
	
	affirm = input("Run the program(y/n)?: ")
	while affirm = y
	  length = float(input("Enter the length: "))
	  width = float(input("Enter the width: "))
	  height = float(input("Enter the height: "))
	  galreq = CompSqFtCalc(length, width, height)
	  Display galreq
	  affirm = input("Run the program(y/n)?: ")
		galreq

- 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).

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

Input	Process	Output

Affirm
Make
Model
Ev_code
Msrp
	`def CompODP(MSRP, make, model, electric):`
	  `if make == "Honda" and model == "Accord":`
	    `percent = 0.10`
	  `elif make == "Toyota" and model == "Rav4":`
	    `percent = 0.15`
	  `elif electric == "Y":`
	    `percent = 0.30`
	  `else:`
	    `percent = 0.05`
	  `newMSRP = MSRP - (MSRP * percent)`
	  `total = newMSRP + (newMSRP * 0.07)`
	  `return total`
	
	`totalsum = 0`
	`msrpsum = 0`
	
	`affirm = input("Run the program(y/n)? :")`
	`while affirm = y`
	  `make = input("Enter the make: ")`
	  `model = input("Enter the model: ")`
	  `ev_code = input("Enter the electric vehicle code(y/n): ")`
	  `msrp = float(input("Enter the MSRP: "))`
	  `total = CompODP(msrp, make, model, ev_code)`
	  `Display total`
	  `totalsum += total`
	  `msrpsum += msrp`
	  `affirm = input("Run the program(y/n)? :")`
	
	`Display msrpsum`
	`Pdisplay totalsum`
		Total
		Msrpsum
		totalsum

- 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.

Miles from Down Town Chicago   Ticket Price

30 or more	$12
20 to 29	$10
10 to 19	$8
All others	$5

Input	Process	Output

Affirm
lname
Miles
	def CompTicketCalc(miles):
	  if miles >= 30:
	    ticket = 12
	  elif miles >= 20 and miles <= 29:
	    ticket = 10
	  elif miles >= 10 and miles <= 19:
	    ticket = 8
	  else:
	    ticket = 5
	
	  return ticket
	
	affirm = input("Run the program(y/n): ")
	sumprice = 0
	while affirm == "y":
	  lname = input ("Enter the last name: ")
	  miles = float(input("Enter the miles from downtown Chicago: "))
	  ticketprice = CompTicketCalc(miles)
	  Display lname
	  Display ticketprice
	  sumprice += ticketprice
	  affirm = input("Run the program(y/n): ")
	
	Display sumprice
		lname
		Ticketprice
		Sumprice

- 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.

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

Input	Process	Output

Affirm
County
market_value
	```def CompAVCalc(county, market_value):```
	``` if county == "Cook":```
	``` av_percent = 0.90```
	``` elif county == "DuPage":```
	``` av_percent = 0.80```
	``` elif county == "McHenry":```
	``` av_percent = 0.75```
	``` elif county == "Kane":```
	``` av_percent = 0.60```
	``` else:```
	``` av_percent = 0.70```
	``` av_value = market_value * av_percent```
	``` return av_value```
	
	```Affirm = input("Run the program(y/n)?: ")```
	```mvsum =0```
	```avsum =0```
	```while Affirm = y```
	``` County = input("Enter the county: ")```
	``` Market_value = float(input("Enter the market value: "))```
	``` av_value = CompAVCalc(County, Market_value)```
	``` Display av_value```
	``` mvsum += Market_value```
	``` avsum += av_value```
	``` Affirm = input("Run the program(y/n)?: ")```
	
	```Display mvsum```
	```Display avsum```
		Av_value
		Mvsum
		Avsum