Problem Set – More on Functions

1. Prompt the user to repeatedly 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

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| **Input** | **Process** | **Output** |
| Last name | Comp NextMonthSales  Input by value: month, sales  Input by reference: next month’s sales |  |
| Month | NextMonthSales=sales\*(1+forecast percent)  Enter month  Enter sales  NextMonthSales=CompNextMonthSales(month, sales) | Last name  Month  Sales  NextMonthSales |
| Sales | Display NextMonthSales |  |
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1. 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.

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| **Input** | **Process** | **Output** |
| Length | Comp SqFT  Input by value:length,width,height  Input by reference:SqFt |  |
| Width | Main  Enter length  Enter wight  Enter height  SqFT=CompSqFt(length,width,height)  Gallons=SqFt/50 | Length,width,height  SqFt  Gallons needed |
| Height |  |  |
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1. Prompt the user to repeatedly 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

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| **Input** | **Process** | **Output** |
| Make | Comp discount price  Input by value: make, model, MSRP  Input by reference: discount price |  |
| Model | Main  If Make ==Toyota and model==RAV4  PercentOff=.15  Elif Make==Honda and model==Accord  PercentOff=.10  Else  PercentOff=.05  DiscountPrice=MSRP-(MSRP\*PercentOff)+.07\*(MSRP-(MSRP\*PercentOff)  SumMSRP=0  SumDiscountPrice=0 | Make, Model,MSRP  Discount Price  SumMSRP  SumDiscountPrice |
| MSRP | Display discount price  Display SumMSRP  Display SumDiscountPrice |  |

1. 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

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| **Input** | **Process** | **Output** |
| Last name | Comp ticket price  Input by value: miles from Chicago  Input by reference: ticket price | Last name  Ticket price  Sum of all tickets |
| Miles from Chicago | Display ticket price  Display sum of all tickets |  |

1. 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

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| **Input** | **Process** | **Output** |
| County | Comp Assessed Value  Input by value: county, market value  Input by reference: Assessed Value  CompAV=AVp\*MV | Assessed Value(AV)  Market Value(MV)  TotalAV  TotalMV |
| Market Value | Display Assessed Value  Display Market Value |  |
|  | Display TotalMV  Display TotalAV |  |
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