Elliot DeMerit – Week 8

Problem Set – Loops & Functions

1. Enter destination city, miles travelled to get there and gallons of gasoline used for any number of trips entered at the keyboard (use ctl+z to stop). Use a function to compute miles per gallon. Display the destination city and miles per gallon for each trip entered. Sum the miles travelled and give a count of the number of trips made. Display these at the end of the program.

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| Dcity | Function: MilesperGallon (Tmiles, Ggas)  mpg = Tmiles / Ggas  Return mpg |  |
| Tmiles | Mtotal = 0  Tcount = 0  Get first Dcity, Tmiles, Ggas |  |
| Ggas | While not eof  MPG = MilesperGallon (Tmiles, Ggas)  Display: Dcity, MPG  Mtotal = Mtotal + Tmiles  Tcount = Tcount + 1  Get Dcity, Tmiles, Ggas | Dcity, MPG |
|  | Display: Mtotal, Tcount | Mtotal, Tcount |

1. Allow the employee to enter last name, job code and hours worked (use ctl+z to stop). Use a function to calculate pay. (Job code L is $25/hr, A is $30/hr and J is $50/hr). Give time and a half for overtime. Display last name and pay for each employee. Sum the pay for each employee as well as count the entries made. After all entries are made, compute and display the average pay and the number of entries made.

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| Lname | Function: Pay (Whours, Prate)  Pa = Whours \* Prate  Return Pa |  |
| Jcode | Ptotal = 0  Ecount = 0  Get first Lname, Jcode, Whours |  |
| Whours | while not eof  if Whours is greater than 40  Whours = 40 + ((Whours - 40) \* 1.5)  else  Whours = Whours  if Jcode is L  Prate = 25.00  else if Jcode is A  Prate = 30.00  else if Jcode is J  Prate = 50.00  Pamount = Pay (Whours, Prate)  Display: Lname, Pamount  Ptotal = Ptotal + Pamount  Ecount = Ecount + 1  Get Lname, Jcode, Whours | Display: Lname, Pamount |
|  | Display: Pave, Ecount | Display: Pave, Ecount |

1. Allow any number of students to enter their last name and the credits taken (use ctl+z to stop). Charge $250 per credit hour. Use a function to compute total tuition. Display student last name, credits taken and tuition owed. Sum tuition and give a count of the number of students who entered data.

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| Lname | Function: TotalTuition (Tcredits)  T = Tcredits \* 250  Return T |  |
| Tcredits | Ttotal = 0  Snum = 0  Get first Lname, Tcredits |  |
|  | While not eof  Ttuit = TotalTuition (Tcredits)  Display: Lname, Tcredits, Ttuit  Ttotal = Ttotal + Ttuit  Snum = Snum + 1  Get Lname, Tcredits | Display: Lname, Tcredits, Ttuit |
|  | Display | Display: Ttotal, Snum |

1. Any number of customers will enter a product code (W, C, G) and a quantity (ctl+z to stop). Use a function to determine unit price. Write another function to compute shipping. Then compute the total. Display the product code, unit price, shipping, extended price (quantity x unit price) and total for the order for each entry. Sum and display the total of all entries made.

Product Code Unit Price Shipping

W $10.00 $2.00

C $15.00 $5.00

G $20.00 $7.00

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| Pcode | Function: UnitPrice (Pcode)  if Pcode = W  u = 10.00  else if Pcode = C  u = 15.00  else if Pcode = G  u = 20.00  Return u |  |
| Qty | Function: Shipping (Pcode)  if Pcode = W  s = 2.00  else if Pcode = C  s = 5.00  else if Pcode = G  s = 7.00  Return s |  |
|  | Ptotal = 0  Get first Pcode, Qty |  |
|  | While not eof  Uprice = UnitPrice (Pcode)  Ship = Shipping (Pcode)  Scost = Ship \* Qty  Exprice = Uprice \* Qty  Tprice = Exprice + Scost  Display: Pcode, Uprice, Ship, Exprice, Tprice  Ptotal = Ptotal + Tprice  Get Pcode, Qty | Display: Pcode, Uprice, Scost, Exprice, Tprice |
|  | Display: Ptotal | Display: Ptotal |

1. Allow students to enter the department and course code as noted below for any number of courses (ctl+z to stop). Use a function to determine the lab fee also in the table below. For each entry display the department, course code and lab fee. Give the total of all lab fees to collect. Compute and display the average lab fee.

Department Course Code Lab Fee

CIS 101 $50.00

CIS 121 $100.00

MAT 111 $25.00

MAT 112 $35.00

ENG 100 $55.00

All Others $50.00

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| Dcode | Function: LabFee (Dcode, Ccode)  If Dcode = CIS AND Ccode = 101  LF = 50.00  Else if Dcode = CIS AND Ccode = 121  LF = 100.00  Else if Dcode = MAT AND Ccode = 111  LF = 25.00  Else if Dcode = MAT AND Ccode = 112  LF = 35.00  Else if Dcode = ENG AND Ccode = 100  LF = 55.00  Else  LF = 50.00  Return LF |  |
| Ccode | Ftotal = 0  Lfcount = 0  Get first Dcode, Ccode |  |
|  | While not eof  Lfee = LabFee (Dcode, Ccode)  Display: Dcode, Ccode, Lfee  Ftotal = Ftotal + Lfee  Lfcount = Lfcount + 1  Get Dcode, Ccode | Display: Dcode, Ccode, Lfee |
|  | Lfave = Ftotal / Lfcount  Display: Ftotal, Lfave | Display: Ftotal, Lfave |