#Class: CSE1321L

#Section: 19

#Term: Spring 19

#Instructor: Kevin Markley

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#Lab#: 2

Assignment #

**Problem 1**- Design (pseudocode) and implement (source code) a program (name it Cylinder) to compute the volume of a cylinder using the following formulas (PI is 3.14):

**Area = radius \* radius \* PI**

**Volume = area \* length**

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| BEGIN MAIN  PRINT “Please enter Radius of cylinder.”  READ radius  PRINT “Please enter length of Cylinder”  READ length  CREATE pi <- 3.14  CREATE area <- (radius \* radius \* pi)  CREATE volume <- (area \* length)  PRINT “The area of your cylinder is: “ + area  PRINT “The volume is: “ + volume  END MAIN |

**Problem 2** - Design (pseudocode) and implement (source code) a program (name it SumDigits) to sum the total of all digits in an input integer number between 0 and 1000, inclusive. Notice that you need to extract individual digits from the input number using the remainder (modulus) and division mathematical operators. For example, if the input number is 123, the sum of its digits is 6.

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| BEGIN MAIN  PRINT “Please enter a number between 0 and 1000”  READ userInput  CREATE sum  sum <- 0  sum <- + (userInput % 10)  #to get last digit.  userInput / 10  #to drop last digit  REPEAT FOR userInput>0  PRINT “The sum of your digits is” + sum  END MAIN |

**Problem 3** - Design (pseudocode) and implement (source code) a program (name it Distance) to compute the distance between 2 points. The program prompts the user to enter 2 points (X1, Y1) and (X2, Y2). The distance between 2 points formula is:

Square\_Root [(X2 – X1)^2 + (Y2 – Y1)^2]

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| BEGIN MAIN  PRINT “Please enter ‘X’ value of point 1”  READ xOne  PRINT “Please enter ‘Y’ value of point 1”  READ yOne  PRINT “Please enter ‘X’ value of point 2”  READ xTwo  PRINT “Please enter ‘Y’ value of point 2”  READ yTwo  distance ←Square\_Root [(xTwo – xOne)^2 + (yTwo –xOne)^2]  PRINT “The distance between the two points you entered is:”, distance “.”  END MAIN |

**Problem 4** - Design (pseudocode) and implement (source code) a program (name it DrivingCost) to compute the cost of a road trip. The program prompts the user to enter the distance to be traveled, the car fuel efficiency (mile per gallon), and the fuel cost per gallon. The program computes and displays the trip cost.

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| BEGIN MAIN  PRINT “Please enter the number of miles to be traveled: “  READ travelDistance  PRINT “Please enter your average MPG: “  READ MPG  PRINT “Please enter estimated $/Gallon  READ fuelCost  fuelUse ← travelDistance / MPG  tripCost ← fuelUse \* fuelCost  PRINT “The estimated cost of your travel is: “, tripCost  END MAIN |