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/* The algorithm allows the user to create an estimate of the cost to build a table.
The algorithm will be made up of a menu driven algorithm that will continue until the user specifically
states that they do not want any additional estimates. */

LET tableCounter is a positive natural number that holds the count of estimated tables.
LET pie is a floating number that holds a value of mathematical pie as 3.14159.
LET totalCost is a floating number that holds the sum of all estimates costs.
LET choice is a natural number that represents the choice of the user.
LET length is a floating number that holds the length measurenment of a table.
LET width is a floating number that holds the width measurenment of a table.
LET diameter is a floating number that holds the diameter measurenment of a circular table.
LET tableCost is a floating number that holds the cost of a single table.
LET area is a floating number that holds the area a table.

START
        tableCounter <-- 0
        pie <-- 3.14159
        totalCost <-- 0
        DO
                DISPLAY "Welcome to Tables - Yours One Stop Table Shop"
                DISPLAY "Abrham Getchew - Master Table Builder"
                DISPLAY "What shape of table do you want to build?"
                DISPLAY "1. Rectangular"
                DISPLAY "2. Square"
                DISPLAY "3. Circular"
                DISPLAY "4. End"
                DISPLAY "Enter menu entry: "
                ACCEPT choice
        WHILE choice is not a number or choice > 4 or choice < 1
                DISPLAY "Error - Invalid Entry. Please reenter a valid value"
                DISPLAY "What shape of table do you want to build?"
                DISPLAY "1. Rectangular"
                DISPLAY "2. Square"
                DISPLAY "3. Circular"
                DISPLAY "4. End"
                DISPLAY "Enter menu entry: "
                ACCEPT choice
        END WHILE
        SWITCH choice TO:
                CASE 1:
                        DISPLAY "Enter the length of the table (in inches): "
                        ACCEPT length
                        WHILE length < 1
                                DISPLAY "Error - Length must be greater than zero. Please reenter a valid value"
                                ACCEPT length
                        END WHILE
                        DISPLAY "Enter the width of the table (in inches): "
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        ACCEPT width
        WHILE width < 1
                DISPLAY "Error – Width must be greater than zero. Please reenter a valid value"
                ACCEPT width
        END WHILE
        area <-- length * width
        tableCounter <-- tableCounter + 1
CASE 2:
        DISPLAY "Enter the length of the table (in inches): "
        ACCEPT length
        WHILE length < 1
                DISPLAY "Error – Length must be greater than zero. Please reenter a valid value"
                ACCEPT length
        END WHILE
        area <-- length * length
        tableCounter <-- tableCounter + 1
CASE 3:
        DISPLAY "Enter the diameter of the table (in inches):  "
        ACCEPT diameter
        WHILE diameter < 1
                DISPLAY "Error – diameter must be greater than zero. Please reenter a valid value"
                ACCEPT diameter
        END WHILE
        area <-- (diameter * diameter * pie) / 4
                        tableCounter <-- tableCounter + 1
                CASE 4:
                        IF tableCounter = 1 THEN
                                DISPLAY "The total cost of 1 table you estimated is $" + totalCost
                                DISPLAY "Thank you for using the table cost estimation program!"
                                DISPLAY "Goodbye!!!"
                                STOP
                        ELSE
                                DISPLAY "The total cost of the " + tableCounter + " tables you estimated is $" +
totalCost
                                DISPLAY "Thank you for using the table cost estimation program!"
                                DISPLAY "Goodbye!!!"
                                STOP
                        END IF
        END SWITCH
        DISPLAY "What type of material do you want to use?"
        DISPLAY "1.Laminate ($0.125 per square inch)"
        DISPLAY "2.Oak ($0.25 per square inch)"
        DISPLAY "Enter menu entry: "
        ACCEPT choice
        WHILE choice is not a number or choice > 2 or choice < 1
                DISPLAY "Error – Invalid Entry. Please reenter a valid value"
                DISPLAY "1.Laminate ($0.125 per square inch)"
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                DISPLAY "2.Oak ($0.25 per square inch)"
                DISPLAY "Enter menu entry: "
                ACCEPT choice
        END WHILE
        SWITCH choice TO:
                CASE 1:
                        tableCost <-- area * 0.125
                        totalCost <-- totalCost + tableCost
                        DISPLAY "The area of the table is " + area + " square inches"
                        DISPLAY "The table will be made of laminate"
                CASE 2:
                        tableCost <-- area * 0.25
                        totalCost <-- totalCost + tableCost
                        DISPLAY "The area of the table is " + area + " square inches"
                        DISPLAY "The table will be made of oak"
        END SWITCH
        DISPLAY "The cost of this table is $" + tableCost
WHILE 1 = 1
```