Weight 10 % **Core Portfolio II**

Playground Calculator (PlayCalc)

Purpose – to modify a program which creates a costed Packing Slip reflecting the materials needed to build a playground fence

Topics of Evaluation

1. Correct errors or missing code from Core Portfolio I
2. Iterative processing
3. Exception handling
4. Data Validation
5. Maintain a working maintainable programming solution using topics 1-4 above, to create the Playground Calculator program using programming techniques demonstrated in class.

Requirements

1. Create a model for the program by drawing a flowchart or writing the pseudo code for the program.
2. Create a test plan and proof of output
3. Enter the code to implement your model.
4. Test your code with your test plan. If you discover mistakes, correct the code and model, and execute the test plan again.

Specifications

Inputs (feet as a double, assume valid input)

- Dimensions of a rectangular playground (length, width and height of fence including gates)
- Height and width of a single gate- always chain link (120.00 + 15.75 per square foot)
- Distance between posts (usually 6 – 8 feet)
- Type of paint/stain
  - Basic 11.99 / quart - gallon (covers 300 sq feet)
  - Premium 15.99 /quart - gallon (covers 400 sq feet)
  - Deluxe 19.99 / quart - gallon (covers 500 sq feet)
- Type of fence material
  - Pressure treated spruce - 4.50 / square foot + 17.20 per post + 0.49 / lineal foot of railing
  - Cedar – 7.25 / square foot + 23.99 per post + 0.69 / lineal foot of railing
  - Chain Link – 13.50 / square foot + 50.79 per post + 2.49 / lineal foot of railing

Outputs

- Amount and type of fencing material required and extended price
- Number of posts required and extended price
- Lineal feat of railing required
- Amount and type of paint required and extended price
- Price of gate
- Net Price
- Total GST (5%)
- Total Price

Additional Requirements

Correct your current calculator program to meet Core Portfolio I specifications

You must provide a menu to allow the user to enter some or all of the inputs at their discretion

- see the test run video on moodle

The packing slip must display zeros for all items that do not have complete input data

- i.e. no gate width entered… gate price should also show zero

Input data must be valid positive number or valid choices

Continue prompting for a valid value per required input

Calculate a 10 percent waste factor on all lineal and square footages after all other material calculations have been done

Posts should be calculated by dividing the total lineal footage of the fence by the gap between posts and rounded up to the next whole number. Add 1 post for the first corner

A fence requires both top and bottom railings

Paint can only be bought in whole quarts (4 per gallon)

Chain Link does not require paint

Right align all number columns, left align text columns

Format prices to two decimal places and all other numbers to one decimal place

Your instructor may stipulate additional requirements.

Submission

You may demonstrate your application to your instructor for comments before submitting (the instructor will **NOT look at it for marking)**.

A rubric will be supplied showing evaluation for the final submission.

Your instructor will inform you on how/where your final solution should be submitted.

Typical fence layout