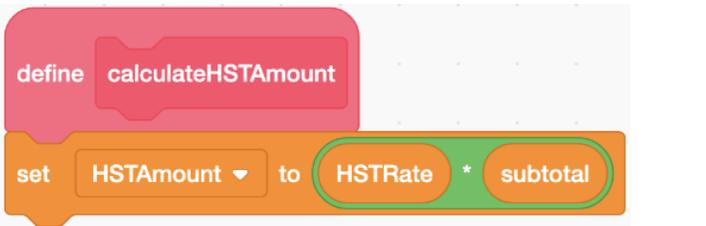


Answers

1. The user is asked to enter the diameter of the container, the label height, and the number of labels they want printed.
2. Once completed, the application will calculate and display the design cost, printing cost, subtotal, tax, and total.
3. a) The cost per square centimetre to design a label;
\$1.50 per square centimetre
b) The cost per label to print the labels;
\$0.002, or 0.2¢ per label.

4. a)  A Scratch code block for a function named 'calculateLabelArea'. It contains a 'set' block where 'labelArea' is set to the product of 'pi', 'diameter', and 'labelHeight'.

b)  A Scratch code block for a function named 'calculateHSTAmount'. It contains a 'set' block where 'HSTAmount' is set to the product of 'HSTRate' and 'subtotal'.

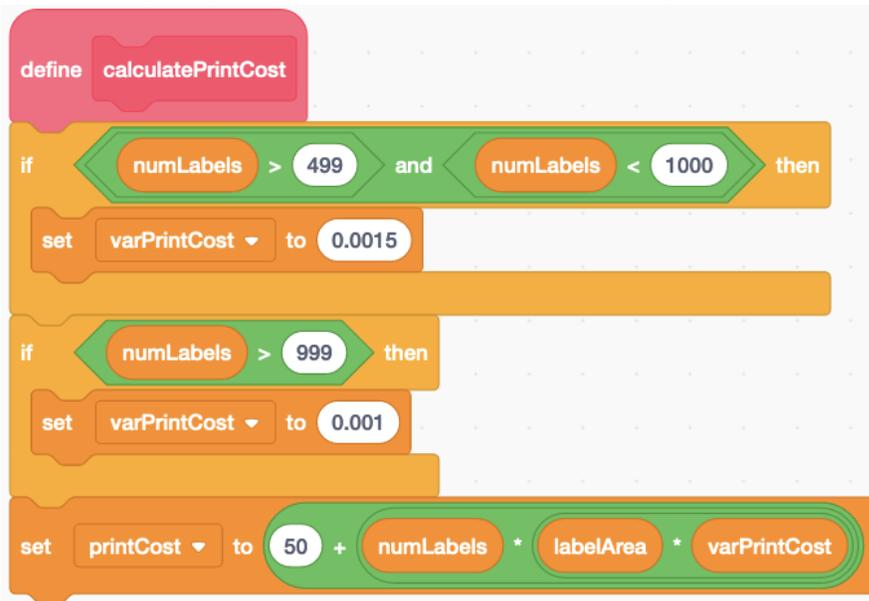
5. a) subprogram **calculateSubtotal**
subtotal = DesignCost + PrintCost
- b) subprogram **calculateTotal**
Total = subtotal + HSTAmount

Answers (cont'd)

Extensions:

Sample answers:

- I decided to make the rate per label \$0.0015 (0.15¢) for orders between 500 and 999 labels and \$0.001 (0.1¢) for orders of 1000 or more labels. This is how I changed the subprogram that calculates the print cost:



```
define calculatePrintCost
  if numLabels > 499 and numLabels < 1000 then
    set varPrintCost to 0.0015
  if numLabels > 999 then
    set varPrintCost to 0.001
  set printCost to 50 + numLabels * labelArea * varPrintCost
```

- I added a block to the end of each of the subtotal and HST amount subprograms.
One new block multiplies the subtotal variable by 100, rounds it, then divides by 100.
One new block multiplies the HSTAmount variable by 100, rounds it, then divides by 100.
Because the total is calculated by adding these two variables, it will also be calculated to 2 decimal places.

Answers (cont'd)

The subprograms look like this:

```
define calculateSubtotal
  set subtotal to designCost + printCost
  set subtotal to round subtotal * 100 / 100

define calculateHSTAmount
  set HSTAmount to HSTRate * subtotal
  set HSTAmount to round HSTAmount * 100 / 100
```