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CSC-117-02 Java Programming  
Due Date: 5/3/2021  
What does the program do: find the circumference of several shapes using methods class

Shapes Circumference Design:

1. Start
2. Main Method
   1. Declare variables
      1. Option
      2. Repeat
   2. Create scanner
   3. Display “this program is to calculate the circumference of a shape”
   4. Display “to select from the menu enter Y or y”
   5. Set repeat
   6. Do
      1. Method 2 (switch method)
      2. Display “to reselect form the menu enter y or Y. to exit hit any other key”
      3. Set repeat

While(repeat == y OR repeat == Y)

1. Method 2 (switch method)
   1. Initialize and declare variables
      1. Side1 = 0
      2. Side2 = 0
      3. Side3 = 0
      4. Length = 0
      5. Width = 0
      6. Side X = 0
      7. Triangle Circumference = 0
      8. Rectangle Circumference = 0
      9. Square Circumference = 0
      10. Option
   2. Create scanner
   3. Display “for triangle enter 1”
   4. Display “for rectangle enter 2”
   5. Display “for square enter 3”
   6. Set option
   7. Switch statement
      1. Case 1: display “you chose 1: triangle”

Side1 = triangle input

Side2 = triangle input

Side3 = triangle input  
Triangle Circumference = Triangle Method(Side1, Side2, Side3)  
Triangle Output Method(Side1, Side2, Side3, Triangle

Circumference)

break

* + 1. Case 2: display “you chose 2: rectangle”

Length = rectangle length input

Width = rectangle width input

Rectangle Circumference = Rectangle Method(Length, Width)  
Rectangle Output Method(Length, Width, Rectangle

Circumference)

break

* + 1. Case 3: display “you chose 3: square”

Side x = square input

Square circumference = square method(side x)

Square output method(side x, square circumference)

break

* + 1. Default: display “invalid choice”

1. Method 3 (input validation)
   1. Declare variables
      1. number
   2. Create scanner
   3. Display “please enter a positive value”
   4. Set number
   5. While(number < 0)
      1. Display “please enter a positive number”
      2. Set number
   6. Return number
2. Method 4 (triangle input method)
   1. Declare and initialize variables
      1. Side = 0
   2. Create scanner
   3. Display “enter side length”
   4. Set side
   5. If(side < 0)
      1. Side = Input validation
   6. Return side
3. Method 5 (triangle circumference method)
   1. Return(side1 + side2 + side3)
4. Method 6 (triangle output method)
   1. Display “side 1 = ” + side1 + “side 2 = ” + side2 + “side3 = ” + side3”
   2. Display “circumference = ” + triangle circumference”
5. Method 7 (rectangle length input method)
   1. Declare variable
      1. Length
   2. Create scanner
   3. Display “please enter length”
   4. Set length
   5. If(length < 0)
      1. Length = input validation
   6. Return length
6. Method 8 (rectangle width input method)
   1. Declare variables
      1. Width
   2. Create scanner
   3. Display “please enter width”
   4. Set width
   5. If (width < 0)
      1. Width = input validation
   6. Return width
7. Method 9 (rectangle circumference method)
   1. Return ((length \* 2) + (width \* 2))
8. Method 10 (rectangle output method)
   1. Display “length = ” + length + “width = ” + width
   2. Display “circumference = ” + rectangle circumference
9. Method 10 (square input method)
   1. Declare variables
      1. Side x
   2. Create scanner
   3. Display “enter side length”
   4. Set side x
   5. If(side x < 0)
      1. Side x = input validation
   6. Return side x
10. Method 11 (square circumference method)
    1. Return(side x \* 4)
11. Method 12 (square output method)
    1. Display “side = ” + side x
    2. Display “circumference = ” + circumference
12. End