

ASSIGNMENT 4

Due date: Tuesday, 02/09/2021 at 11:59 PM PST

Requirement:

The U.S. post office has rules about mailing packages. A package cannot be mailed if the sum of its length and girth is greater than 100 inches, or if the package weighs more than 70 pounds. The girth is the perimeter around the height and width, where length is defined as the longest of the three dimensions.

Create a class `LastnameFirstnameA4.java` program having four private **double** data members – length, height, width and weight storing dimensions (in inches) and weight (in pounds) of a package.

Weights should be passed as a command line argument and use `setWeight()` method to set the private variable.

Along with the constructor, the member methods in this class include:

- `rearrangeDim()` – rearranges dimensions (length, height, width) values of the package such that *length* holds the largest value.
- `calculateGirth()` – calculates the girth of a package where girth is the perimeter around the *height* and *width* and returns the girth value.
- `validatePackage()` – validates the package with respect to the post office rules and returns int value. It checks if the:
 - Package is too large and too heavy
 - Package is too large
 - Package is too heavy
 - Package is acceptable
- `print()` – displays if the package is acceptable or not and also displays necessary details of the package as shown below

You can pass arguments in the above functions wherever required.

In the main method of `LastnameFirstnameA4.java` create the objects of this class and call the function(s) necessary to print the required output as shown in the ***sample output***.

Sample Test Cases:

Test Case 1 –

`LastnameFirstnameA4 obj1 = new LastnameFirstnameA4(5, 13.5, 2);` (Pass 40 as weight as a program parameter)

`LastnameFirstnameA4 obj2 = new LastnameFirstnameA4(15.7, 25, 54);` (Pass 47.6 as weight as a program parameter)

LastnameFirstnameA4 obj3 = new LastnameFirstnameA4(13, 10.9, 21); (Pass 90.5 as weight as a program parameter)

LastnameFirstnameA4 obj4 = new LastnameFirstnameA4(43, 45, 10.8); (Pass 102.0 as weight as a program parameter)

Output –

Package is acceptable.

Package is too large

The length of package=54.0

The girth of package=81.4

Package is too heavy

The weight of package=90.5

Package is too large and too heavy

The length of package=45.0

The girth of package=107.6

The weight of package= 102.0

Program Completed.

Notes:

1. The program should always print '**Program Completed**' before exiting.
2. Check if your program works properly by giving different inputs.
3. Give comments to increase code readability.
4. Mention the sources used to complete the assignment.
5. Save the file as LastnameFirstnameA4.java
6. **Submit .java file only.**