

CO225: Software Construction

Lab 02 : Classes, Objects, Methods

Tasks :

- A. Complete the classes (named "Circle", "Square", "Sphere", "Cube") with separate methods to calculate area of a circle, surface area of a sphere, area of a square and surface area of cube according to the given parameter.
- B. Update the classes (named "Sphere", "Cube") with separate methods to calculate volume of sphere and volume of cube according to the given parameter.
- C. Enhance the above java code
 - a. To read a command line input value (radius or length of a side) and print the value of followings according to the input value.
 - i. area of a circle
 - ii. surface area of a sphere
 - iii. area of a square
 - iv. surface area of cube
 - v. volume of sphere
 - vi. volume of cube
 - b. To read two command line inputs, the second input will be the unit. According to the unit, your print result should vary. The acceptable units for this system are millimeter (mm), centimeter (cm) and meter (m) only. If a user enters other units or the second command line input is not given, the system should print values without units and a message to indicate the unacceptable units. Calculated values should be rounded to the nearest integer before printing them.

As an example, if user provides "7 m" as the command line input values, output should be as follows:

- Area of a circle with 7 m radius: 154 m²
- Surface area of a sphere with 7 m radius: 616 m²
- Area of a square with 7 m side: 49 m²
- Surface area of a cube with 7 m side: 294 m²
- Volume of a sphere with 7 m radius: 1437 m³
- Volume of a cube with 7 m side: 343 m³

Instruction to Submit : You have to submit only one .java file with completed code for Tasks A, B and C.