Project 1 Documentation

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CMSC 335

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**UML Diagram**

My UML diagram for this project is below; the image may only be clear if zoomed in since the image used is very wide. I used MermaidChart (a chart maker) to create my diagram.

A diagram of a diagram

Description automatically generated

**User Guide**

To set up the application, open the Project1 folder in Visual Studio Code. Make sure all .java files from this program are in the same directory ./Project1/src. To run the program, hover over the Run tab in the top left of VSCode and click the start debugging command:

A screenshot of a computer

Description automatically generated

This should also automatically compile the code. Unfortunately, I was unable to figure out how to compile the java files and run Project1 in the PowerShell terminal despite using the correct commands. If using a Linux terminal such as WSL, open the terminal in VSCode using the dropdown menu in the terminal tab at the bottom of the VSCode window.

A screenshot of a computer program

Description automatically generated

Click which terminal you wish to use. The example on my computer is Ubuntu (WSL). Go to the proper directory with the cd command if not in the directory with the java files already. Compile all .java files with the command javac \*.java and then run the Project1 with the command java Project1 command. Follow the program’s directions or force exit with CTRL+Z or Command+Z if on Mac.

**Test Data/Plan**

My test plan is as follows in the table below:

|  |  |  |  |
| --- | --- | --- | --- |
| Test # | Description | Screenshot | PASS/FAIL Flag |
| 1 | Tests if the program properly gets the area of a Circle |  | PASS |
| 2 | Tests if the program properly calculates the area of a Square |  | PASS |
| 3 | Tests for proper calculation of the area of a Rectangle |  | PASS |
| 4 | Tests for proper calculation of the area of a Triangle |  | PASS |
| 5 | Tests for proper calculation of the volume of a Sphere |  | PASS |
| 6 | Tests for proper calculation of the volume of a Cube |  | PASS |
| 7 | Tests for proper calculation of the volume of a Cone |  | PASS |
| 8 | Tests for proper calculation of the volume of a Cylinder |  | PASS |
| 9 | Tests for proper calculation of the volume of a Torus |  | This may be considered a ½ PASS because the formula does work properly, but I failed to take into account that the minor radius HAS to be smaller. |
| 10 | Tests input validation with selecting from the menu and continuing or not and tests if entering 10 properly exits the program |  | PASS |

**Lessons Learned**

I learned more about how inheritance impacts class creation and how a program may work. If the shapes did not inherit the parent dimension classes or if the dimension classes did not inherit the parent Shape class, the program would have been possibly harder to program or would not work. This project also helped me relearn how SimpleDateFormat and Date worked as well as the general formulas for area and volume of shapes.

**Resources**

Pankaj. (2022, August 23). *Java SimpleDateFormat - Java Date Format* [Review of *Java SimpleDateFormat - Java Date Format*]. Digitalocean.com; digitalocean.com. <https://www.digitalocean.com/community/tutorials/java-simpledateformat-java-date-format>