CSIT121 – Lab 2
Due date: 20 April 2022

Write a program to store and search for cylindrical containers sold in a store. A container is classified by its type (Plastic, Glass or Metal), radius and height. The program will allow user to enter the product specification of N (>= 5) cylinders, and store them in an array. The following screenshot illustrates the data entry operation.

```
Container type: Plastic
Radius : 10
Height: 5
Container type: Plastic
Radius : 10
Height: 10
Container type: Glass
Radius : 5
Height: 5
Container type: Metal
Radius : 20
Height: 5
Container type: Metal
Radius : 15
Height: 10
```

When the data entry is completed, the program will display the following search options.

```
Container Search:
1 By type
2 By volume
3 Quit
Your selection?
```

For option 1, the program will prompt the user to indicate the container type (Plastic, Glass or Metal) and display the matching products.

```
Enter type: Plastic
Plastic container with volume 1571
Plastic container with volume 3142
```

For option 2, the program will prompt the user to indicate the container volume, and display container whose volume is equal to or greater than the specified volume.

```
Enter volume: 1000
Plastic container with volume 1571
Plastic container with volume 3142
Metal container with volume 6283
Metal container with volume 7069
```

Your program should consist of two classes as follow:

class	Cylinder
Instance variables	type (Plastic, Glass or Metal). radius height You may declare additional instance variable(s) as you deem fit.
Constructor	The constructor will receive three parameters and initialize the instance variables accordingly.
Get methods	getRadius getHeight getVolume
Instance method	toString Parameters: None Returns: A descriptive String as shown in the program executions.

class	*XX_YourName*_Lab2 where XX is your tutorial class (e.g. T1, T2, etc.)
Static method	main Prompts user to enter container type, radius and height. Saves the detail in an array of Container Allows user to search containers • by type • by volume

Source code comments

Please include appropriate comments in the program.

Submission

Please submit a single Java file (containing the above two classes) to Moodle.