

## Question 1: Objects, enumeration & objects

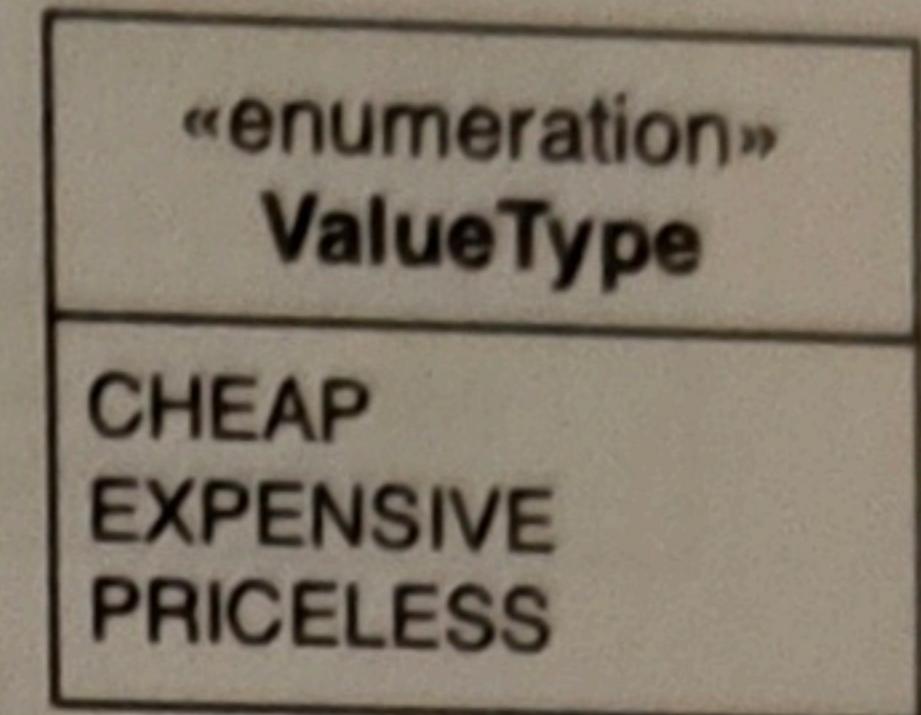
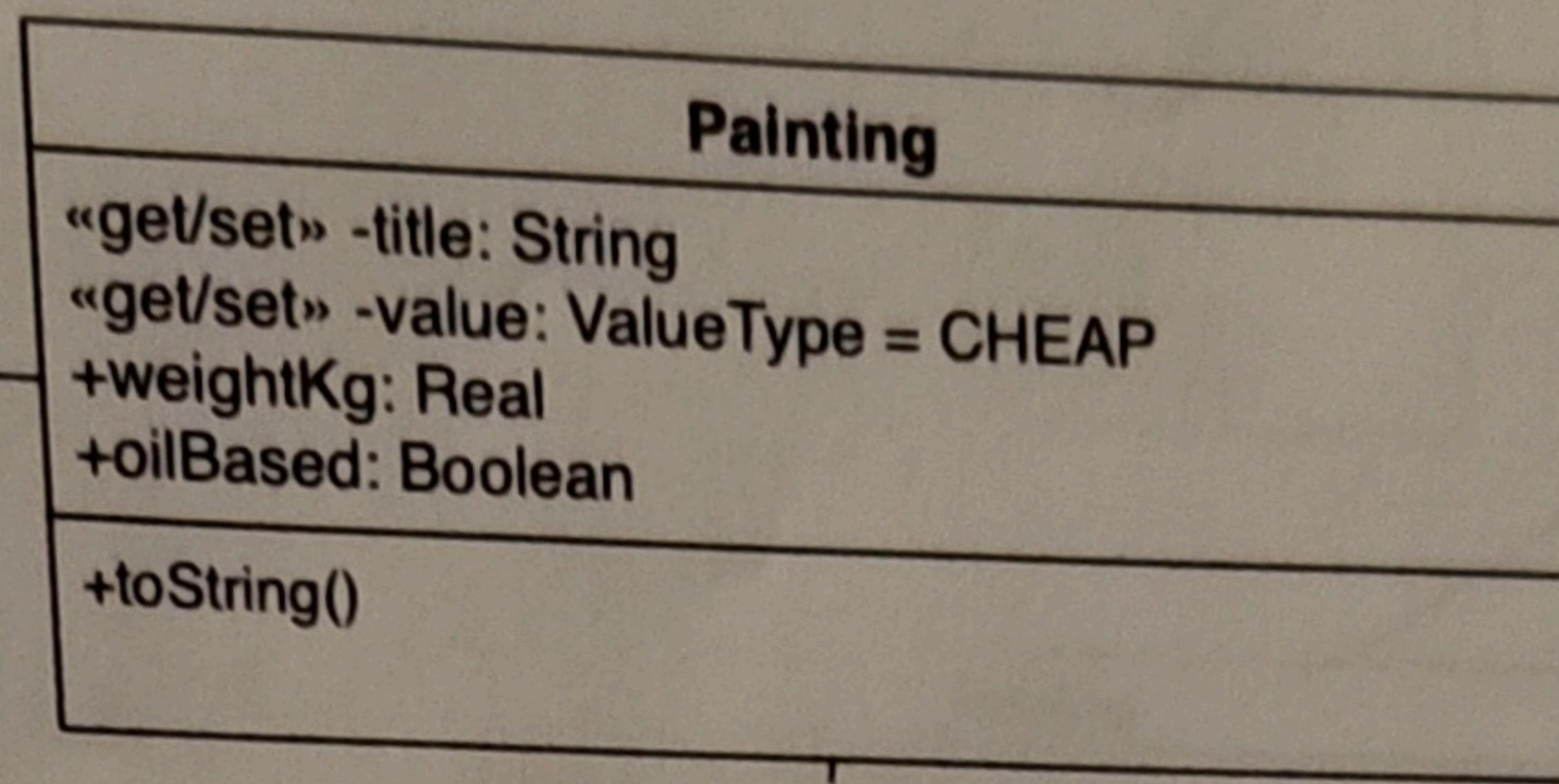
Submit your answers to this question in folder:

question1/

Total: 30 marks

**mona: Painting**

```
title = "Mona Lisa"
value = PRICELESS
weightKg = 12.9
oilBased = true
```



**Note**

**toString()** to return a String in the form:  
“Painting = <title> (<oilString>, <weight>kg, <value>)”  
If **oilBased** is true then **oilString** is “oil-based”, otherwise “not an oil painting”  
e.g.  
“Painting = Mona Lisa (oil-based, weight 12.9kg, PRICELESS)”

**1a.** Write Java files to implement the classes in the diagram above.

**1b.** Write a **main(...)** method in class **Main** to do the following:

- create and print out the details of the object(s) in the diagram.

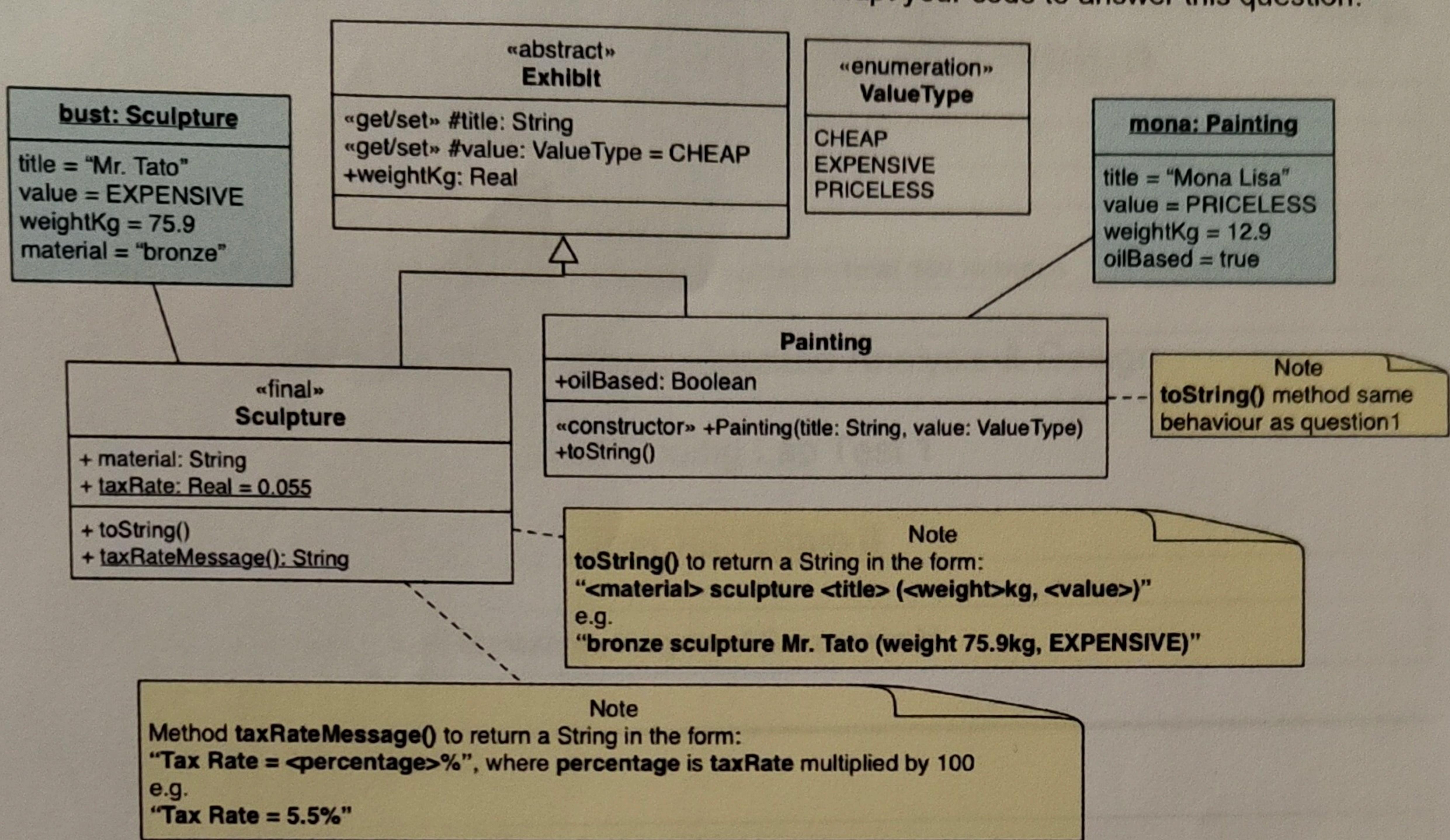
Your program output should look as follows:

```
$ java Main
Painting = Mona Lisa (oil-based, weight 12.9kg, PRICELESS)
```

## Question 2: Inheritance, protected & static

Total: 70 marks

Copy your question 1 folder, naming the copy: **question2/**. Adapt your code to answer this question.



**2a.** Write Java files to implement the classes in the diagram above.

**2b.** Write a `main(...)` method in class `Main` to do the following:

- Create the `Painting` object from the diagram, and print out its details
- Create the `Sculpture` object from the diagram, and print out its details
- Print out the value returned from `Sculpture` method `taxRateMessage()`
- Change the value of `taxRate` to `0.1`
- Print out the value returned from `Sculpture` method `taxRateMessage()`

Your program output should look as follows:

```

$ java Main

Painting = Mona Lisa (oil-based, weight 12.9kg, PRICELESS)

bronze sculpture Mr. Tato (weight 75.9kg, EXPENSIVE)

Tax Rate = 5.5%

Tax Rate = 10%
  
```