Recap on Java classes

Let’s create an automatic espresso machine

What are the actions that can be performed on an espresso machine?

What set of variables describes the state of an espresso machine?

Define actions - write method implementations

Define methods that change the state of the coffee maker.

Define methods that let “user” see what is the (partial) state of the machine.

Pay attention to return types and method parameter types.

Note 1: please do not implement the methods yet. Only define their names, return types and parameter types (signature).

Note 2: private methods can be introduced later to make the implementation easier.

Define state - declare instance variables

What instance variables capture the state of the coffee maker?

or

What instance variables are needed for implementing the methods?

Defines names and types of instance / object variables.

Note: all instance variables will be private.

Define ways to create an object - constructors

Are there different initial states for the coffee machine?

If you have multiple constructors, consider calling a “root” constructor from the other(s).

You can make some constructors private and use them only internally.

Write signatures of the constructor(s).

Lab 1 step 1: Create a “user” class for coffee maker

A method (for example, main()) in this class should

- create a coffee maker (use all constructors)
- “use” coffee maker by calling its methods according to some user scenario
- “misuse” coffee maker by calling its methods in an adversary way (try to cause illogical behaviour)

Lab 1 step 2: Create CoffeeMaker class

Instance / class variables - private

Constructor(s) - public / private

Methods - public / private

Run together with your user class.

Advanced coffee maker

The maker has a number of predefined coffee types (strong espresso, capuccino, normal coffee etc.)

The selection of coffee drinks might be different for example for different markets but the basic machine is unchanged.

(Note: The machine should have a milk container for capuccino style drinks)

Lab 2: Create user class and CoffeeMaker class for advanced coffee maker

Note: you might want to create other class(es) / interface(s) to place some functionality there.

Follow the steps and instructions for lab 1.

Lab 3: UI for CoffeeMaker

Create web UI for basic coffee maker. Use the way of tutorial https://netbeans.org/kb/docs/web/quickstart-webapps.html

Lab 4: Advanced UI for advanced CoffeeMaker

Create UI for advanced coffee maker using Ajax (use jQuery also).

Reflection:

1. In what ways are you able to make the UI better that in Lab 3?