

UBC CPSC 210

Type Hierarchy, Polymorphism, Dispatch Lecture/Lab

Choose one of the two open source systems (JDrawing or JHotDraw) to work with. JDrawing is smaller, less well-designed and mostly works. JHotDraw is bigger, follows more design conventions and works.

For the system you have chosen, answer the following questions. Be prepared to hand-in your answers for participation marks and to help us understand where everyone is in their understanding.

We are doing this in class so you can ask questions – ask away!

- a) Sketch the type hierarchy for the shapes that the program allows a user to draw (e.g., Line, Curve, etc.).
- b) Does the type hierarchy you sketched in part *a* include any abstract classes? What functionality does each abstract class provide to subclasses?
- c) Can you find an example of a method that overrides an (inherited) implementation? Does it extend the overridden implementation or does it replace the inherited implementation? Can you suggest a reason why the method provides an overriding implementation?
- d) Imagine that you have been asked to add the ability for the user to draw a square with the program. What class would you add and where would you put the class in the program's type hierarchy? Why would you choose that place in the hierarchy?
- e) Can you find any places where there are overloaded methods in a class? If not, can you suggest a place where overloading might be useful (you may have to use your imagination here...).