

OOSD: Practice Problems 1

1. Describe the three ways that a constructor may be invoked.
2. Explain the two uses of the reserved word this.
3. Explain the two uses of the reserved word super.
4. When does Java provide a default parameterless constructor?
5. Explain the mechanism of upcasting.
6. Explain the mechanism of downcasting.
7. What conditions must be present to get polymorphism in Java OOP?

Example

<pre>class A { private int x,y,z; : } class B extends A { private int p,q,r,s,t; : } class C extends B { private int x,y; : } class D extends B { private int p,q,r; : }</pre>	<pre>A a = new A(); B b = new B(); C c = new C(); D d = new D(); A ab = new B(); A ac = new C(); B bc = new C();</pre>
---	---

8. How many "memory locations" are allocated for each of the objects referred to by a, b, c, and d?
9. Of the 42 different independent assignments between these seven variables, which are legal as is (upcasting), which can be fixed with a cast (downcasting), and which can never be made legal?