

Unit 2

- Object-Oriented Programming
- Example



OOP — Object-Oriented Programming

- An OOP program models a world of active objects.
- An object may have its own “memory,” which may contain other objects.
- An object has a set of methods that can process messages of certain types.



OOP (cont'd)

- A method can change the object's state, send messages to other objects, and create new objects.
- An object belongs to a particular class, and the functionality of each object is determined by its class.
- A programmer creates an OOP application by defining classes.



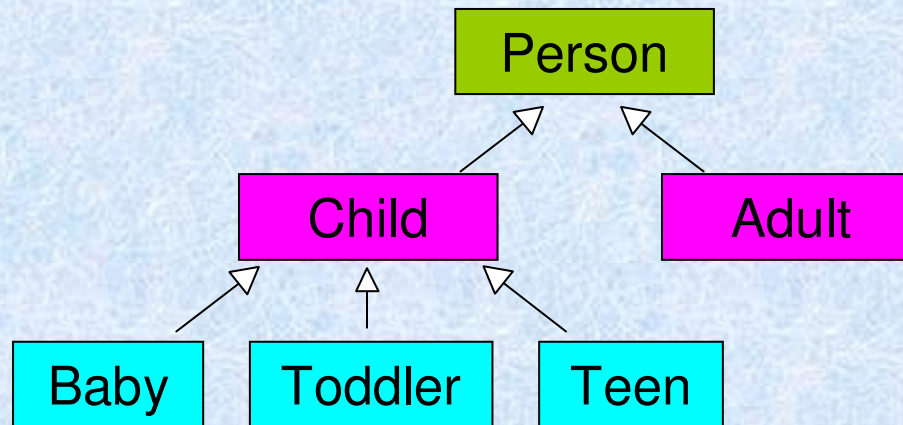
The Main OOP Concepts:

- Inheritance: a *subclass* extends a *superclass*; the objects of a subclass inherit features of the superclass and can redefine them or add new features.
- Event-driven programs: the program simulates asynchronous handling of events; methods are called automatically in response to events.



Inheritance

- A programmer can define hierarchies of classes
- More general classes are closer to the top



Ex. Using the Turtle class, create a Turtle object and “command” that Turtle object to draw a hexagon with side length 50 pixels.

```
import java.awt.Color;  
  
public class Hexagon  
{  
    public static void main (String [ ] args)  
    {
```

