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CSC 470

Chapter 9

           An object-oriented program is used to manage some piece of the state through an interface. In object-oriented, **object**means a managed piece of state. An object has **fields**(stored quantities) with associated procedures called **methods.**We call a method by passing the method names and its arguments called **message passing.**Object-oriented programming provides a **class**that has **fields and methods.**Each object is considered as an instance of a class.

           Object-oriented languages provide **inheritance,**which allows a programmer to define a new class **(a child)**from the old class **(the parents or superclass)** class so that the new class can inherit some functions from the parents and can modify those functions or add more fields. We can say the new class is **inherits from or extends**the old class. There are single inheritance and multiple inheritances. **Subclass polymorphism**is that any instance of any descendant of a class can be used anywhere an instant of the class can be used. If a method of a class is redeclared in its subclass, we said that the new method **overrides**the old one. **Static method dispatch**means that the specific method to invoke can be determined from the text, independent of the class of **self**

           Real-world objects have **state and behavior**(which is controlled by the state). For example, a person can eat, run, and jump and these activities depend on how hungry or excited a person is.

           The key to object-oriented programming is **dynamic dispatch,**which means that a call to an overridden method is resolved at runtime.    

A **program**is a sequence of class declarations followed by an expression to be executed.