

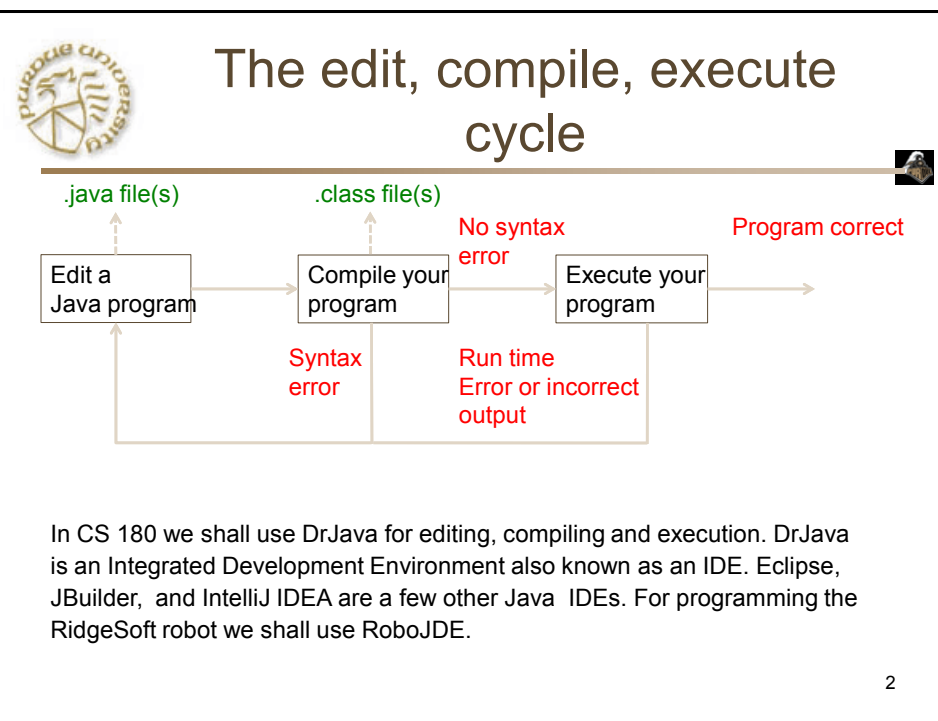


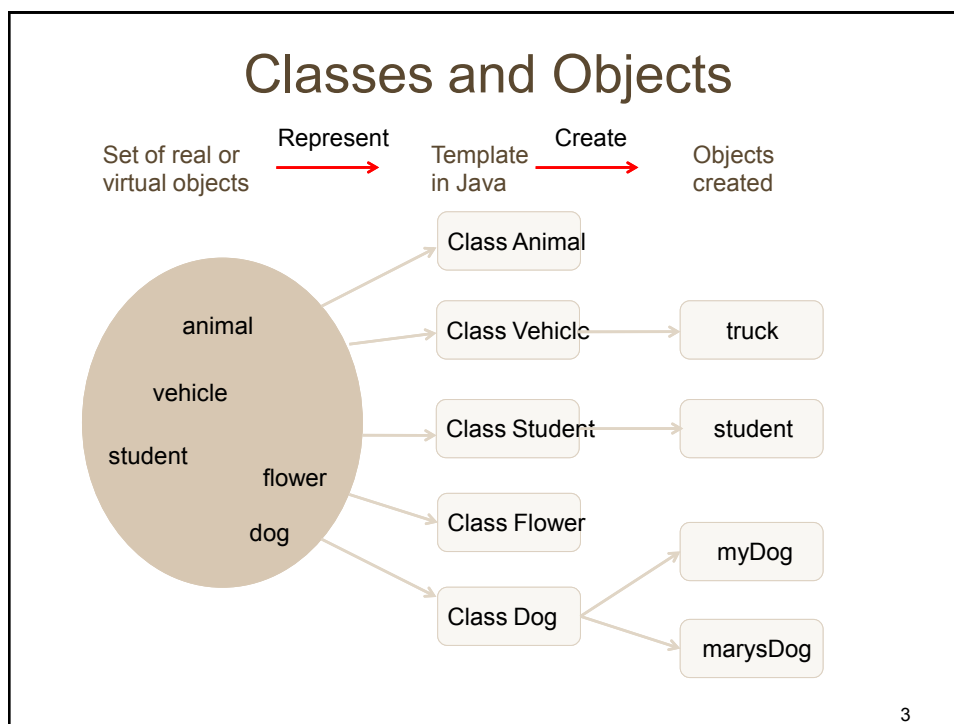
CS18000: Problem Solving And Object-Oriented Programming

Classes and Objects

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Classes and Objects



Class:

Contains properties and operations related to some real or virtual object.

This object could be abstract or concrete
[e.g., a Dog or a Golden Retriever].

Object:

Created from a class.

Contains specialized properties and operations related to a more specific real or virtual object, e.g., object **myDog** created from class **Dog** has breed as a property that might be different from another object **marysDog** created from the same class.

Java program: Structure

Package [Contains one or more classes]

Class [Data and zero or more methods]

Data

Method

Data and statements

At least one class must have a method named `main()`.

Data represents properties of a real, virtual or a Java object. E.g., breed, age, color

Methods are operations that can be performed on an object created from a class. E.g., `run()`, `sit()`, `down()`, `no()`, `goodBoy()`

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Java program: Classes and Objects

class `Automobile`

Data

make model

Method

Data and statements

create `camry`

create `mazdaRX7`

make model

`maxSpeed`

`start()`

make model

`maxSpeed`

`start()`

Objects derived from Class `Automobile`

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Elements of a Sequential Java Program



Program to be dissected:

Program 1.4 **BouncingBall.java** in Chapter 1 pages 12-13.

Strategy:

Go through this program line by line and attempt to understand the meaning of each line.

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Elements of a Concurrent Java Program



Program to be dissected:

Program 1.7 **AreaMeasuringRobot.java** in Chapter 1 pages 29-30.

Strategy:

Go through this program line by line and attempt to understand the meaning of each line.

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Readings and Exercises from the textbook: Weeks 1-2



- Chapter 1
- Chapter 2 through 2.7