CS210
Discussion

Week 2

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Attendance

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Today

- Prime Counter (exercise 2)
- Object Oriented Programming
- Rational (exercise 5)
- Finish through exercise 6
  - Show us passing Gradescope tests to leave early

Prime Counter

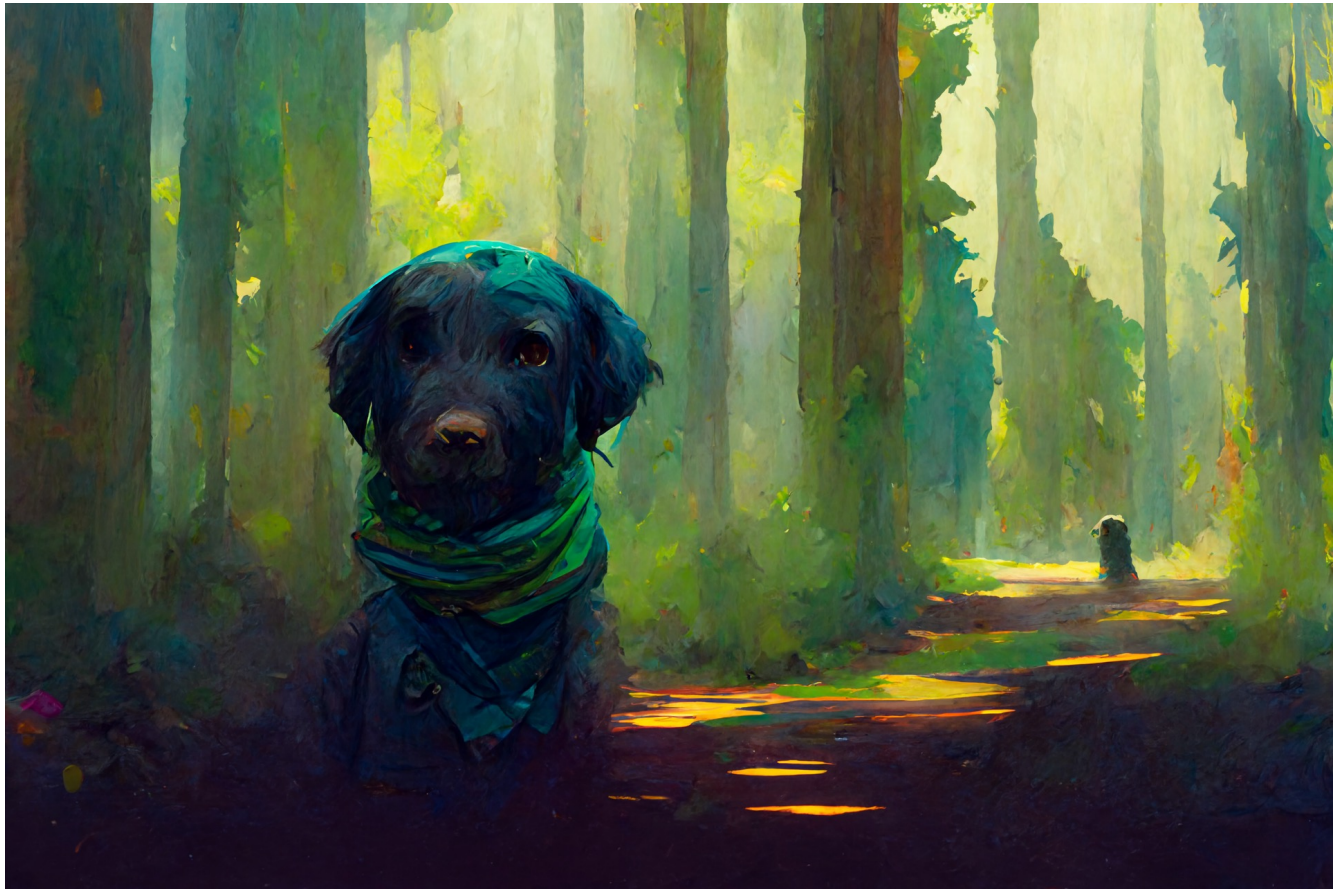
Object Oriented Programming

- Every program in Java is a class
- Create ADTs/Classes to encapsulate what it means to be something
  - A Dog class may have a name and age
  - Rational has numerator and denominator, add and subtract
- Classes often defined in their own file and used in others
  - Rational and Harmonic
- Example

Rational

- Note the notation used in the writeup and comments
  - ‘a/b’ means a Rational object with ‘a’ as the numerator and ‘b’ as the denominator
- Rationals encapsulate a fraction basically
  - Have their own way of doing addition, subtraction, etc.
- Rational objects are used in Harmonic
  - Despite how the instructions look, you need to use the methods on Rational objects
- Let’s look

Questions?



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Exercise Hints

- Use `this` keyword to set an instance variable when it shares a name with a method parameter
  - Ex. `this.x = x;`
- Creating a new object (make sure to use `new` keyword):
  - `Rational total = new Rational(0);`
- Casting a value from one type to another:
  - `Rational other Rational = (Rational) other;`
- In the writeup, if it says the Rational a/b it means the object created by (may use different var names):
  - `new Rational(a, b);`
- Arrays are reference types (objects) and are declared with brackets:
  - `int[] someValues = new int[5];`
    - 5 is arbitrary here.

Questions?

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