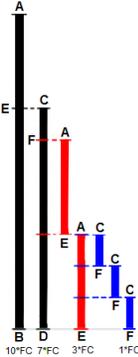


Class Examples
Basic Data Structures

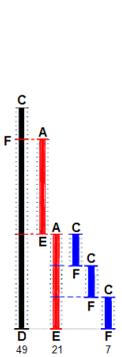
+ Fraction Class (gcd)



- In order to reduce a fraction, we first need to find the Greatest Common Divisor
- Euclid's method is a recursive way to solve this:
 - Base case: $\text{gcd}(a,0)$ is a
 - Recursive case: $\text{gcd}(a,b)$ is $\text{gcd}(b, a \bmod b)$
 - where $a \bmod b = a - b \left\lfloor \frac{a}{b} \right\rfloor$
- Exercise:
 - write a recursive method to do gcd
 - write an iterative method to do gcd



Euclid's example



Nicomachus' example

+ CoffeeDate

- Implement the Cup and Contents class (see below). Create a driver class called CoffeeDate that asks a user for the first person's size and type of drink. For size only allow them to ask for an "eensy" (8 oz.), "so-so"(12 oz.), or "mega" (20 oz.). For type only allow "Coffee" or "Tea". Your last line of code in your main method should be:
 - `System.out.println("Here is your " + cup1 + " and your " + cup2);`

+ Coffee Date

- | | |
|---|---|
| <ul style="list-style-type: none"> ■ Cup <ul style="list-style-type: none"> ■ attributes <ul style="list-style-type: none"> ■ contents ■ strength ■ capacity ■ operations <ul style="list-style-type: none"> ■ fill ■ empty ■ toString | <ul style="list-style-type: none"> ■ Contents <ul style="list-style-type: none"> ■ attributes <ul style="list-style-type: none"> ■ type ■ amount ■ operations <ul style="list-style-type: none"> ■ getType ■ getAmount ■ setType ■ setAmount |
|---|---|