Agenda

- Ctor Chaining
- Types of Methods
- Method Overloading
- Array
    - Single Dimensional
    - Multi Dimensional
    - ~~Ragged~~
- ~~Variable Arity/Argument Method~~
- ~~Object/Field Initializer~~
- ~~final Keyword~~

Constructor Chaning

- Constructor chaining is executing a constructor of the class from another constructor (of the same class).
- Constructor chaining (if done) must be on the very first line of the constructor.

Method Overloading

- Defining methods with same name but differnt arguments(signature) is called as method overloading
- Arguments can differ in one of the following ways

1. No of parameters should be different
2. If no of parameters are same then their type of parameters should be different
3. If no and type are same then the order of paramters should be different

- Count (no of parameters)

```
static int multiply(int a, int b) {
return a * b;
}
static int multiply(int a, int b, int c) {
return a * b * c;
}
```

- type of parameter

```
static int square(int x) {
return x * x;
}
static double square(double x) {
return x * x;
}
```

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- Order or parameters

```
static double divide(int a, double b) {
return a / b;
}
static double divide(double a, int b) {
return a / b;
}
```

- Note that return type is NOT considered in method overloading.

Array

- Array is collection of similar data elements. Each element is accessible using indexes
- It is a reference type in java
- its object is created using new operator (on heap).
- The array of primitive type holds values (0 if uninitialized) and array of non-primitive type holds references (null if uninitialized).
- In Java, checking array bounds is responsibility of JVM. When invalid index is accessed, ArrayIndexOutOfBoundsException is thrown.
- Array types are
    - 1. 1-D array
    - 2. 2-D/Multi-dimensional array
    - 3. Ragged array
        - In 2D array if the second dimension of array is having differnt length then such array is called as Ragged Array

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