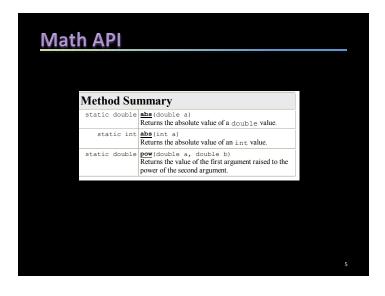


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## THE CONSTRUCTOR

- A constructor section looks like a method but it has no return and its name is the same as the class.
- There can be more than one (overloaded). The default one creates an object with a default state.
- A class with only a default constructor must have mutators if we are to be able to set a non-default state.
- The constructor is invoked with new in order to instantiate the class and create an object of its type.
- A class with no constructor (i.e. a private one) must have all its fields and methods static or else we cannot use it.

## **ANATOMY OF AN API**

The API of a class has three sections:

- A Constructor Section
- A Field Section
- A Method Section
- Each section has a summary and a linked detailed part.
- The job of the constructor is to initialize the state.
- Fields (or public attributes) are used mainly for constants.
- Methods are the ones who "do the work".
- See Links in the course website to basic APIs.

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## **METHODS**

- Each method has a signature = name and parameter types.
- A class cannot have two methods with the same signature (even if the return is different). Hence, can have two methods with the same name (overloaded).
- To bind C.m(...) the compiler locates C (or else issues No Class Definition Found) and then locates m(...) in C (or else issues Cannot Resolve Symbol). If more than one such m is found, it binds with the most specific one.
- Parameters are passed by value. Hence values stored in your variables cannot be inadvertently changed by passing the variables to a method.

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## BEHIND THE SCENES

- Invocation syntax is like two-level addressing: country code then number. The dot separates the two.
- For static methods, the class is the country. For others, a copy is involved. The object reference is the country here.
- Within the object, the address of the object is this.
- Instantiation is slow. So if many state changes are needed and when don't need to retain each, a default constructor and a mutator is better than multiple objects.
- Controller can thus instantiate in *onCreate* and mutate when a button is clicked.

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