CMSC 132: OBJECT-ORIENTED PROGRAMMING II

Miscellaneous

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Initialization Block

• Definition
  • Block of code used to initialize static & instance variables for class

• Motivation
  • Enable complex initializations for static variables
    • Control flow
    • Exceptions
  • Share code between multiple constructors for same class
Initialization Block Types

• Static initialization block
  • Code executed when class loaded
• Initialization block
  • Code executed when each object created
  • (at beginning of call to constructor)
• Example

```java
class Foo {
    static { A = 1; } // static initialization block
    { A = 2; } // initialization block
}
```
Variable Initialization

- Variables may be initialized
  - At time of declaration
  - In initialization block
  - In constructor

- Order of initialization
  1. Declaration, initialization block
     (in the same order as in the class definition)
  2. Constructor
Variable Initialization – Example

class Foo {
    static { A = 1; } // static initialization block
    static int A = 2; // static variable declaration
    static { A = 3; } // static initialization block
    { B = 4; } // initialization block
    private int B = 5; // instance variable declaration
    { B = 6; } // initialization block
    Foo() { // constructor
        A = 7;
        B = 8;
    } // now A = 7, B = 8
} // initializations executed in order of number
BitSet Class

- Implements a set of bits where the bits of the set are indexed by nonnegative integers
- Methods
  - `BitSet()` – New bit set
  - `BitSet(int nbits)` – Bit set large enough to represent bits with indices from 0 through nbits – 1
  - `and(BitSet set)` – Performs logical and between the current object and the set parameter (current object is updated with the result)
  - `or(BitSet set)` – Performs logical or between the current object and the set parameter (current object is updated with the result)
  - `cardinality()` – Returns number of bits set to 1
  - `flip(int bitIndex)` – Sets the bit at the specified index
  - `get(int bitIndex)` – Returns true if the bit at bitIndex is set; false otherwise
  - `length()` – Index of the highest set bit + 1. It returns zero if the BitSet contains no bits set.
  - `size()` – Number of bits space used by the BitSet to represent bit values
  - `toString()` – For every bit set, the decimal representation of that index is included in the result.