Intro to Methods of Software Engineering Fall 2016

Lecture 4 — October 4, 2016

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Written Communication: Code and Emails

Code documentation

Some best practices for code comments:

1. structure your code (just like your writing).
   (avoid 2000-line methods!)
2. choose good names for variables, methods/functions, classes.
   - `i` is totally fine for a loop variable!
   - follow language conventions, e.g. `getX()` versus `x()` (or just allowing direct access to `x`).
   - describe what the thing is/does, e.g. `exceptionQueue()`.
3. in your code, add comments when there are complicated passages (better yet, simplify the code!). One exception: "I tried the obvious thing X but it fails because Y" is a good comment.
4. use good parameter names and include documentation comments for methods and classes, including `@link/@see` references whem appropriate.

```
/**
 * A computational engine for solving relational satisfiability problems.
 * Such a problem is described by a {@link kodkod.ast.Formula formula} in
 * first order relational logic; finite {@link kodkod.instance.Bounds bounds} on
 * the value of each {@link Relation relation} constrained by the formula; and
 * a set of {@link kodkod.engine.config.Options options} specifying, among other global
 * parameters, the length of bitvectors that describe the meaning of
 * {@link IntExpression integer expressions} in the given formula.   The options are
 * usually reused between invocations to the {@linkplain #solve(Formula, Bounds) solve}
 * methods, so they are specified as a part of the {@linkplain KodkodSolver solver} state.
 *
 * <p>
 * A {@link KodkodSolver} takes as input a relational problem and produces a
 * satisfying model or an {@link Instance instance} of it, if one exists.  Some
 * implementation of this interface can also produce a {@link Proof proof} of
 * unsatisfiability, if the given problem has no models.
 * </p>
 *
 * @specfield options: Options
 * @author Emina Torlak
 */
```

5. use unit tests and assertions (more later).

more to come