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## 1. What is PyB

PyB is a B implementation written in python. More informations about B: <http://en.wikipedia.org/wiki/B-Method>

## 2. Use PyB

checking mode:

No animation. Evaluate properties, assertions and invariant clause in the first state. Missing clauses are omitted.  
python pyB.py -c <Filename>

read eval print mode:

evaluate predicates and expressions in repl.  
python pyB.py -repl

animation mode:

Interactive step by step execution of operations and statements. Set up constants and initialization are separate steps.  
python pyB.py <FileName>

evaluate given state (second tool chain). Executed set up constants and initialization using values from solution file.  
python pyB.py -c <FileName> <SolutionFilename>

be sure your PYTHONPATH is set.

Single predicates and expression files need #PREDICATE / #EXPRESSION at the first line

## 3. Flags and Switches

modify pyB/config.py:

### 3.1 ENABLE\_ASSERTIONS:

values: True, False.

summary: evaluate assertions clause (e.g. in checking mode)

### 3.2 BMACHINE\_SEARCH\_DIR:

values: any file path.

summary: search dir of included, extended, used and seen machines

### 3.3 PROPERTIES\_TIMEOUT:

values: double greater than zero

summary: timeout for a subpredicate eval. In properties clause

## 4. Modify PyB

Parser modification:

1. Check out the gradle build tool from the gradle from <http://gradle.org>
2. Modify Main.java and ASTPython.java and move them in the subfolder src/main/java/pyB
3. Run build.gradle file from the project root. On mac os:

**\$ PATH=\$PATH:<YOUR GRADLE PATH> gradle uberjar**

The output looks like this:

```
:compileJava UP-TO-DATE
:processResources UP-TO-DATE
:uberjar UP-TO-DATE
```

**BUILD SUCCESSFUL**

*Total time: 4.737 secs*

4. A File javaparser.jar has been created in /build/libs/.
5. The Java Parser can be tested on mac os by

**\$ java -jar build/libs/javaparser.jar input.txt**

input.txt must contain a B-machine or a B-predicate / B- expression beginning with #PREDICATE or #EXPRESSION. E.g #PREDICATE 1<2

6. Move the jar file to <PYB PATH>/jars/ to use it with pyB or modify the path in config.py