README.md

**What BugBuilder does?**

BugBuilder is a tool for extracting complete and concise bug-fixing patches from human-written patches in version control systems.

**How to obtain BugBuilder?**

BugBuilder can be obtained from <https://github.com/jiangyanjie/BugBuilder> (This repository is permanently stored and available).

**How to get started?**

***/Implementation:*** The Java source code implementing BugBuilder.

***/EvaluationData:*** The patches generated by BugBuilder in the evaluation as well as their explanations.

**/*EvaluationData*/matchedPatches**: Patches generated by BugBuilder that are identical to those in Defects4J

***/EvaluationData*/mismatchedAndUnconcisePatches**: Unconcise patches generated by BugBuilder

***/EvaluationData*/mismatchedButConcisePatches:** Concise patches generated by BugBuilder that are different from those in Defects4J, and the justification/explanation for the conciseness (presented as README files accompanying the patches).

**Prerequisites: Defects4J**

Steps to set up Defects4J

The detailed information can be found at <https://github.com/rjust/defects4j#steps-to-set-up-defects4j>

The main commands are listed as follow:

1. Clone Defects4J:

-- git clone https://github.com/rjust/defects4j

1. Initialize Defects4J:

-- cd defects4j

-- cpanm --installdeps .

-- ./init.sh

1. Add Defects4J’s executables to your PATH:

--export PATH=$PATH:”path2defects4j”/framework/bin

1. Check installation:

--defects4j info -p Lang

**How to use BugBuilder?** (Illustrating with an example(Lang,BugID:26)

1. Preparation

-- add the corresponding project name to *repoName*, add Defects4J’s path to *defects4jPath*, and add BugBuilder’s path to *BugBuilderPath* (in SpecialVersion.sh lines 22-24).

-- add Defects4J’s path to variables *compile* and *test in* CompileJavaTotalProject.java(line 303,305)

1. Checkout source code to the specified version

-- cd BugBuilder/icse/src

-- ./SpecialVersion.sh

1. Run getDiffCommit.java in IntelliJ IDEA

**Output:**

If there is a complete and concise bug-fixing patch, the output will report only one

“Failing tests: 0”