V+Lab

INNOVATING SW TESTING

"Our mission is to improve SW quality and reliability cost-effectively by adopting **Automated SW Testing and Debugging Tools**"

V Plus Lab is founded by KAIST professors and researchers of Software Testing and Verification Group (http://swtv.kaist.ac.kr), who has developed automated software testing/debugging techniques and tools with industries for decades.

To improve software quality and realiability cost-effectively, we provide automated SW testing tools/process/consulting/training.
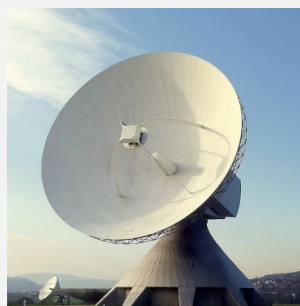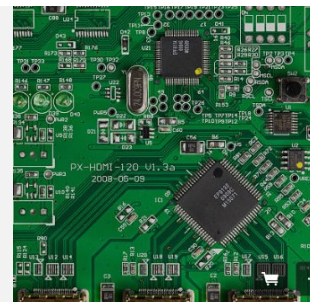
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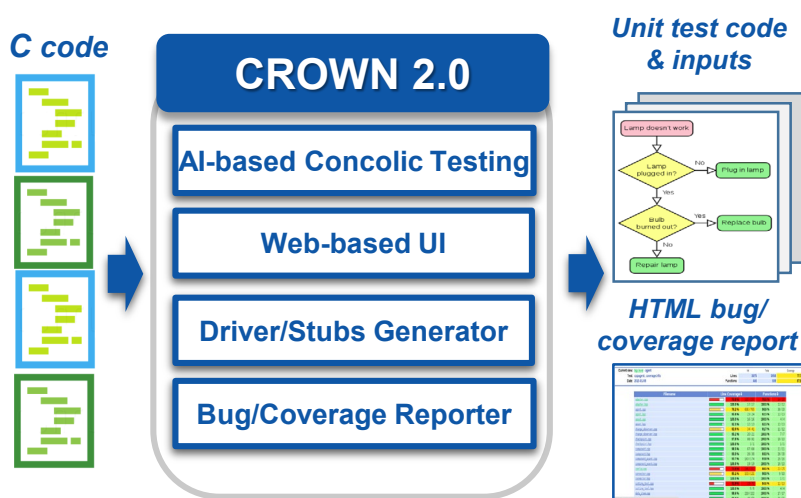**Web:** https://vpluslab.kr

CROWN 2.0

Automated Unit Testing for C program

What is CROWN 2.0

CROWN 2.0 is a fully automated software test solution that significantly **increases bug detection power** and **reduces testing cost** for embedded C programs.

C code → **CROWN 2.0** (AI-based Concolic Testing, Web-based UI, Driver/Stubs Generator, Bug/Coverage Reporter) → *Unit test code & inputs* / *HTML bug/ coverage report*

Why CROWN 2.0

With **CROWN 2.0**, software quality and reliability can be improved cost-effectively through 100% automated test generation which are effective to detect bugs.

How it works

1. **CROWN 2.0** analyzes target code and automatically builds test driver/stubs for unit testing
2. **AI-based Concolic testing engine** automatically generates test inputs that exercises **all possible execution paths** of target unit under test.
3. Then, CROWN 2.0 reports the achieved coverage and detected crash bugs.

Product Features

- **Automatically build stub and driver code**
- **Automated test case generation based on AI-based Concolic testing**
- **Code-coverage report and analysis**
- **Test case export to other tools such as VectorCast or ControllerTester**
- **Easy-to-use web-based GUI interface**

Highlights

- **100% automated generation of test code/inputs**
- **High-quality unit test generation achieving >90% of branch coverage (or >80% of MC/DC coverage)**
- **Easily integrated in current SW testing processes**