SI2-SSE: C11Tester: Scaling Testing of C/C++11 Atomics to Real-World Systems

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- Modern programming languages provide atomic operations

- Atomic operations:
  - Make it possible to build faster, more scalable data structures with stronger guarantees
  - Expose developers to complex behaviors that arise from CPU & compiler optimization
  - Are extremely difficult to use correctly

- C11Tester project is building tools to help developers effectively test code with atomic operations

```
┌─────────────────┐
│    C/C++11      │
│ Application Code │
└─────────────────┘
         │
         ▼
┌─────────────────┐
│  Compiled code  │
│  linked into the│
│C11Tester Library│
└─────────────────┘
         │
         ▼
┌ ─ ─ ─ ─ ─ ─ ─ ─ ┐
   C11Tester
   Framework
  ┌─────────────┐
│ │ Extensible  │ │
  │  Plugins    │
  └─────────────┘
└ ─ ─ ─ ─ ─ ─ ─ ─ ┘
         │
         ▼
┌─────────────────┐
│      Bugs       │
└─────────────────┘
```