

## Platform

- Ethan Deturk:
  - DistAlgo version: 1.1.0b15
  - Python implementation and version: CPython 3.7.3
  - Operating system name and version: Debian 10
  - Type of host: laptop
- Andrew Burford:
  - DistAlgo version: 1.1.0b15
  - Python implementation and version: CPython 3.7.10
  - Operating system name and version: macOS Big Sur 11.5.2
  - Type of host: laptop
- Jiawei Qian
  - DistAlgo version: 1.1.0b15
  - Python implementation and version: implementation = CPython 3.7.9
  - Operating system name and version: Windows 10
  - Type of host: laptop

## Bugs and Limitations. (for both Twins and Diem)

- If a leader knows it has to sync up, it should ideally wait for a sync response before making a proposal but it does not. This means its proposal will never receive a quorum of votes so this round times out. By the next round, the leader in the previous should have finished syncing up so if it the leader again then it can make a valid proposal. This means that this bug is just an efficiency limitation.
- Bracha timeout is disabled because if there are  $f+1$  replicas in a bucket, they will continually send timeout messages which clogs up the log files. This just means that replicas might have to wait a bit longer before forming a TC but in practice it doesn't matter much because all replicas timeout at about the same time. This is an efficiency limitation.

## Main files (for test generator and executor)

- Files containing the main code for test generator:
  - consensus/testgenerator.py
- Files containing the main code for test executor:
  - consensus/src/testexec.da

## Code size

- Total LOC for test executor : 401
- Total LOC for test generator: 226
- Counts obtained using `grep "\S" $fname|wc -l`

## Language feature usage (Twins only, not diem)

- numbers of list comprehensions: 4
- numbers of dictionary comprehensions: 7
- numbers of set comprehensions: 9

- numbers of aggregations: 4
- numbers of quantifications: 7
- numbers of await statements: 3
- numbers of receive handlers: 1

## **Contributions**

- Ethan DeTurk:
  - Test Generator
  - Manually written test executor test cases
- Andrew Burford:
  - Test Executor
  - Manually written test executor test cases
  - diemBFT bug fixing
- Jiawei Qian:
  - Connecting generator and executor
  - Generator configurations and test reports
  - Documentation