```
> go test -v -race -run TestElectionFollowerComesBack |& tee /tmp/raftlog
=== RUN   TestElectionFollowerComesBack
13:56:00.195710 [0] listening at [::]:33777
13:56:00.195839 [1] listening at [::]:32793
13:56:00.195909 [2] listening at [::]:46667
13:56:00.196889 [1] election timer started (203ms), term=0
13:56:00.196898 [0] election timer started (193ms), term=0
13:56:00.196941 [2] election timer started (200ms), term=0
13:56:00.397950 [2] becomes Candidate (currentTerm=1); log=[]
13:56:00.398073 [0] becomes Candidate (currentTerm=1); log=[]
13:56:00.398193 [2] sending RequestVote to 1: {Term:1 CandidateId:2 LastLogIndex:0 LastLogTerm:0}
13:56:00.398301 [0] election timer started (275ms), term=1
13:56:00.398324 [2] sending RequestVote to 0: {Term:1 CandidateId:2 LastLogIndex:0 LastLogTerm:0}
13:56:00.398312 [2] election timer started (238ms), term=1
13:56:00.398466 [0] sending RequestVote to 2: {Term:1 CandidateId:0 LastLogIndex:0 LastLogTerm:0}
13:56:00.398629 [0] sending RequestVote to 1: {Term:1 CandidateId:0 LastLogIndex:0 LastLogTerm:0}
13:56:00.402339 [0] RequestVote: {Term:1 CandidateId:2 LastLogIndex:0 LastLogTerm:0} [currentTerm=1, votedFor=0]
13:56:00.402441 [0] ... RequestVote reply: &{Term:1 VoteGranted:false}
13:56:00.404656 [1] RequestVote: {Term:1 CandidateId:2 LastLogIndex:0 LastLogTerm:0} [currentTerm=0, votedFor=-1]
13:56:00.404767 [1] ... term out of date in RequestVote
13:56:00.404801 [1] becomes Follower with term=1; log=[]
13:56:00.404853 [1] ... RequestVote reply: &{Term:1 VoteGranted:true}
13:56:00.405018 [2] received RequestVoteReply {Term:1 VoteGranted:false}
13:56:00.405006 [1] election timer started (173ms), term=1
13:56:00.405060 [1] RequestVote: {Term:1 CandidateId:0 LastLogIndex:0 LastLogTerm:0} [currentTerm=1, votedFor=2]
13:56:00.405275 [1] ... RequestVote reply: &{Term:1 VoteGranted:false}
13:56:00.405326 [2] RequestVote: {Term:1 CandidateId:0 LastLogIndex:0 LastLogTerm:0} [currentTerm=1, votedFor=2]
13:56:00.405460 [2] ... RequestVote reply: &{Term:1 VoteGranted:false}
13:56:00.405831 [2] received RequestVoteReply {Term:1 VoteGranted:true}
13:56:00.405903 [2] wins election with 2 votes
13:56:00.405938 [2] becomes Leader; term=1, log=[]
13:56:00.406128 [2] sending AppendEntries to 0: ni=0, args={Term:1 LeaderId:2 PrevLogIndex:0 PrevLogTerm:0 Entries:[] LeaderCommit:0}
13:56:00.406231 [0] received RequestVoteReply {Term:1 VoteGranted:false}
13:56:00.406184 [2] sending AppendEntries to 1: ni=0, args={Term:1 LeaderId:2 PrevLogIndex:0 PrevLogTerm:0 Entries:[] LeaderCommit:0}
13:56:00.406323 [0] received RequestVoteReply {Term:1 VoteGranted:false}
13:56:00.406989 [1] in election timer term changed from 0 to 1, bailing out
13:56:00.408504 [1] AppendEntries: {Term:1 LeaderId:2 PrevLogIndex:0 PrevLogTerm:0 Entries:[] LeaderCommit:0}
13:56:00.408645 [1] AppendEntries reply: {Term:1 Success:true}
13:56:00.408990 [2] in election timer state=Leader, bailing out
13:56:00.411180 [0] AppendEntries: {Term:1 LeaderId:2 PrevLogIndex:0 PrevLogTerm:0 Entries:[] LeaderCommit:0}
13:56:00.411297 [0] becomes Follower with term=1; log=[]
13:56:00.411361 [0] AppendEntries reply: {Term:1 Success:true}
13:56:00.411445 [0] election timer started (158ms), term=1
13:56:00.497371 [TEST] Disconnect 0
13:56:00.572444 [0] becomes Candidate (currentTerm=2); log=[]
13:56:00.572534 [0] sending RequestVote to 2: {Term:2 CandidateId:0 LastLogIndex:0 LastLogTerm:0}
13:56:00.572591 [0] sending RequestVote to 1: {Term:2 CandidateId:0 LastLogIndex:0 LastLogTerm:0}
13:56:00.572648 [0] election timer started (204ms), term=2
13:56:00.579014 [0] in election timer term changed from 1 to 2, bailing out
13:56:00.585623 [1] becomes Candidate (currentTerm=2); log=[]
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13:56:00.585798 [1] election timer started (239ms), term=2
13:56:00.585804 [1] sending RequestVote to 2: {Term:2 CandidateId:1 LastLogIndex:0 LastLogTerm:0}
13:56:00.585804 [1] sending RequestVote to 0: {Term:2 CandidateId:1 LastLogIndex:0 LastLogTerm:0}
13:56:00.587850 [2] RequestVote: {Term:2 CandidateId:1 LastLogIndex:0 LastLogTerm:0} [currentTerm=1, votedFor=2]
13:56:00.587933 [2] ... term out of date in RequestVote
13:56:00.587957 [2] becomes Follower with term=2; log=[]
13:56:00.588002 [2] ... RequestVote reply: &{Term:2 VoteGranted:true}
13:56:00.588105 [1] election timer started (249ms), term=2
13:56:00.588629 [1] received RequestVoteReply {Term:2 VoteGranted:true}
13:56:00.588675 [1] wins election with 2 votes
13:56:00.588705 [1] becomes Leader; term=2, log=[]
13:56:00.588799 [1] sending AppendEntries to 2: ni=0, args={Term:2 LeaderId:1 PrevLogIndex:0 PrevLogTerm:0 Entries:[] LeaderCommit:0}
13:56:00.588856 [1] sending AppendEntries to 0: ni=0, args={Term:2 LeaderId:1 PrevLogIndex:0 PrevLogTerm:0 Entries:[] LeaderCommit:0}
13:56:00.594433 [2] AppendEntries: {Term:2 LeaderId:1 PrevLogIndex:0 PrevLogTerm:0 Entries:[] LeaderCommit:0}
13:56:00.594539 [2] AppendEntries reply: {Term:2 Success:true}
13:56:00.596911 [1] in election timer state=Leader, bailing out
13:56:00.783458 [0] becomes Candidate (currentTerm=3); log=[]
13:56:00.783673 [0] election timer started (296ms), term=3
13:56:00.783732 [0] sending RequestVote to 2: {Term:3 CandidateId:0 LastLogIndex:0 LastLogTerm:0}
13:56:00.783744 [0] sending RequestVote to 1: {Term:3 CandidateId:0 LastLogIndex:0 LastLogTerm:0}
13:56:00.848933 [2] becomes Candidate (currentTerm=3); log=[]
13:56:00.849107 [2] sending RequestVote to 1: {Term:3 CandidateId:2 LastLogIndex:0 LastLogTerm:0}
13:56:00.849094 [2] sending RequestVote to 0: {Term:3 CandidateId:2 LastLogIndex:0 LastLogTerm:0}
13:56:00.849130 [2] election timer started (198ms), term=3
13:56:00.853875 [1] RequestVote: {Term:3 CandidateId:2 LastLogIndex:0 LastLogTerm:0} [currentTerm=2, votedFor=1]
13:56:00.854001 [1] ... term out of date in RequestVote
13:56:00.854047 [1] becomes Follower with term=3; log=[]
13:56:00.854108 [1] ... RequestVote reply: &{Term:3 VoteGranted:true}
13:56:00.854297 [1] election timer started (188ms), term=3
13:56:00.854564 [2] received RequestVoteReply {Term:3 VoteGranted:true}
13:56:00.854615 [2] wins election with 2 votes
13:56:00.854651 [2] becomes Leader; term=3, log=[]
13:56:00.854764 [2] sending AppendEntries to 1: ni=0, args={Term:3 LeaderId:2 PrevLogIndex:0 PrevLogTerm:0 Entries:[] LeaderCommit:0}
13:56:00.854811 [2] sending AppendEntries to 0: ni=0, args={Term:3 LeaderId:2 PrevLogIndex:0 PrevLogTerm:0 Entries:[] LeaderCommit:0}
13:56:00.860195 [1] AppendEntries: {Term:3 LeaderId:2 PrevLogIndex:0 PrevLogTerm:0 Entries:[] LeaderCommit:0}
13:56:00.860241 [2] in election timer state=Leader, bailing out
13:56:00.860286 [1] AppendEntries reply: {Term:3 Success:true}
13:56:01.055353 [1] becomes Candidate (currentTerm=4); log=[]
13:56:01.055500 [1] sending RequestVote to 2: {Term:4 CandidateId:1 LastLogIndex:0 LastLogTerm:0}
13:56:01.055532 [1] election timer started (202ms), term=4
13:56:01.055555 [1] sending RequestVote to 0: {Term:4 CandidateId:1 LastLogIndex:0 LastLogTerm:0}
13:56:01.060178 [2] RequestVote: {Term:4 CandidateId:1 LastLogIndex:0 LastLogTerm:0} [currentTerm=3, votedFor=2]
13:56:01.060291 [2] ... term out of date in RequestVote
13:56:01.060317 [2] becomes Follower with term=4; log=[]
13:56:01.060362 [2] ... RequestVote reply: &{Term:4 VoteGranted:true}
13:56:01.060486 [2] election timer started (260ms), term=4
13:56:01.060665 [1] received RequestVoteReply {Term:4 VoteGranted:true}
13:56:01.060730 [1] wins election with 2 votes
13:56:01.060772 [1] becomes Leader; term=4, log=[]
13:56:01.060868 [1] sending AppendEntries to 2: ni=0, args={Term:4 LeaderId:1 PrevLogIndex:0 PrevLogTerm:0 Entries:[] LeaderCommit:0}
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13:56:01.060904 [1] sending AppendEntries to 0: ni=0, args={Term:4 LeaderId:1 PrevLogIndex:0 PrevLogTerm:0 Entries:[] LeaderCommit:0}
13:56:01.065360 [2] AppendEntries: {Term:4 LeaderId:1 PrevLogIndex:0 PrevLogTerm:0 Entries:[] LeaderCommit:0}
13:56:01.065461 [2] AppendEntries reply: {Term:4 Success:true}
13:56:01.065751 [1] in election timer state=Leader, bailing out
13:56:01.083826 [0] becomes Candidate (currentTerm=4); log=[]
13:56:01.083929 [0] election timer started (193ms), term=4
13:56:01.083948 [0] sending RequestVote to 1: {Term:4 CandidateId:0 LastLogIndex:0 LastLogTerm:0}
13:56:01.083948 [0] sending RequestVote to 2: {Term:4 CandidateId:0 LastLogIndex:0 LastLogTerm:0}
13:56:01.148432 [TEST] Reconnect 0
13:56:01.284045 [0] becomes Candidate (currentTerm=5); log=[]
13:56:01.284141 [0] election timer started (230ms), term=5
13:56:01.284148 [0] sending RequestVote to 1: {Term:5 CandidateId:0 LastLogIndex:0 LastLogTerm:0}
13:56:01.284177 [0] sending RequestVote to 2: {Term:5 CandidateId:0 LastLogIndex:0 LastLogTerm:0}
13:56:01.287609 [1] RequestVote: {Term:5 CandidateId:0 LastLogIndex:0 LastLogTerm:0} [currentTerm=4, votedFor=1]
13:56:01.287723 [1] ... term out of date in RequestVote
13:56:01.287747 [1] becomes Follower with term=5; log=[]
13:56:01.287802 [1] ... RequestVote reply: &{Term:5 VoteGranted:true}
13:56:01.287918 [1] election timer started (273ms), term=5
13:56:01.288546 [0] received RequestVoteReply {Term:5 VoteGranted:true}
13:56:01.288601 [0] wins election with 2 votes
13:56:01.288644 [0] becomes Leader; term=5, log=[]
13:56:01.288737 [0] sending AppendEntries to 2: ni=0, args={Term:5 LeaderId:0 PrevLogIndex:0 PrevLogTerm:0 Entries:[] LeaderCommit:0}
13:56:01.288751 [0] sending AppendEntries to 1: ni=0, args={Term:5 LeaderId:0 PrevLogIndex:0 PrevLogTerm:0 Entries:[] LeaderCommit:0}
13:56:01.291308 [1] AppendEntries: {Term:5 LeaderId:0 PrevLogIndex:0 PrevLogTerm:0 Entries:[] LeaderCommit:0}
13:56:01.291396 [1] AppendEntries reply: {Term:5 Success:true}
13:56:01.291340 [2] RequestVote: {Term:5 CandidateId:0 LastLogIndex:0 LastLogTerm:0} [currentTerm=4, votedFor=1]
13:56:01.291476 [2] ... term out of date in RequestVote
13:56:01.291509 [2] becomes Follower with term=5; log=[]
13:56:01.291561 [2] ... RequestVote reply: &{Term:5 VoteGranted:true}
13:56:01.291646 [2] in election timer term changed from 4 to 5, bailing out
13:56:01.291738 [2] AppendEntries: {Term:5 LeaderId:0 PrevLogIndex:0 PrevLogTerm:0 Entries:[] LeaderCommit:0}
13:56:01.291863 [2] AppendEntries reply: {Term:5 Success:true}
13:56:01.291948 [2] election timer started (261ms), term=5
13:56:01.292440 [0] received RequestVoteReply {Term:5 VoteGranted:true}
13:56:01.292506 [0] while waiting for reply, state = Leader
13:56:01.295304 [0] in election timer state=Leader, bailing out
13:56:01.300969 [0] becomes Dead
13:56:01.300997 [1] becomes Dead
13:56:01.301013 [2] becomes Dead
13:56:01.303140 [2] in election timer state=Dead, bailing out
13:56:01.308410 [1] in election timer state=Dead, bailing out
    leaktest.go:132: leaktest: timed out checking goroutines
    leaktest.go:150: leaktest: leaked goroutine: goroutine 46 [chan receive]:
        github.com/eliben/raft.(*ConsensusModule).startLeader.func1()
            /home/hkhnhan/Desktop/raft-master/part1/raft.go:343 +0xaa
        created by github.com/eliben/raft.(*ConsensusModule).startLeader in goroutine 137
            /home/hkhnhan/Desktop/raft-master/part1/raft.go:336 +0x14e
    leaktest.go:150: leaktest: leaked goroutine: goroutine 89 [chan receive]:
        github.com/eliben/raft.(*ConsensusModule).startLeader.func1()
            /home/hkhnhan/Desktop/raft-master/part1/raft.go:343 +0xaa
```

Các server lần lượt trở thành leader khi thời gian election time out, và thời gian heart beat được reset liên tục nên không bao giờ timeout