```go
package main

import (
	"bufio"
	"fmt"
	"log"
	"net/rpc"
	"os"
	"strconv"
	"time"
)

// ----------------------------------------------------------
// Data Structures and RPC Arg/Reply
// ----------------------------------------------------------

type SetKeyArgs struct {
	BucketName string
	Key        int
	Value      string
}

type GetKeyArgs struct {
	BucketName string
	Key        int
}

type DeleteKeyArgs struct {
	BucketName string
	Key        int
}

type EmptyRequest struct{}

type Response struct {
	Data    string
	Message string
}

// ----------------------------------------------------------
// RPC Helper Functions
// ----------------------------------------------------------

func getKey(client *rpc.Client, args GetKeyArgs) string {
	var reply Response
	err := client.Call("LeaderRPC.GetKey", args, &reply)
	if err != nil {
		return fmt.Sprintf("[ERROR getKey]: %v", err)
	}
	if reply.Message != "" {
		return fmt.Sprintf("[FAIL getKey]: %s", reply.Message)
	}
	return reply.Data
}

func setKey(client *rpc.Client, args SetKeyArgs) string {
	var reply Response
	err := client.Call("LeaderRPC.SetKey", args, &reply)
	if err != nil {
		return fmt.Sprintf("[ERROR setKey]: %v", err)
	}
	if reply.Message != "OK" {
		return fmt.Sprintf("[FAIL setKey]: %s", reply.Message)
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64          }
65          return "OK"
66  }
67
68  func deleteKey(client *rpc.Client, args DeleteKeyArgs) string {
69          var reply Response
70          err := client.Call("LeaderRPC.DeleteKey", args, &reply)
71          if err != nil {
72                  return fmt.Sprintf("[ERROR deleteKey]: %v", err)
73          }
74          return reply.Message
75  }
76
77  // For the new test calls
78  func getStoreInfo(client *rpc.Client) string {
79          var reply Response
80          err := client.Call("LeaderRPC.GetStoreInfo", EmptyRequest{}, &reply)
81          if err != nil {
82                  return fmt.Sprintf("[ERROR getStoreInfo]: %v", err)
83          }
84          if reply.Message != "" {
85                  return fmt.Sprintf("[FAIL getStoreInfo]: %s", reply.Message)
86          }
87          return reply.Data
88  }
89
90  // ------------------------------------------------------------
91  // Test Routines
92  // ------------------------------------------------------------
93
94  func testSetGetDelete(client *rpc.Client) {
95          fmt.Println("== TestSetGetDelete on Leader ==")
96          // 1) Set
97          setRes := setKey(client, SetKeyArgs{"User", 1, "User A"})
98          fmt.Println(" SetKey(User,1) =>", setRes)
99
100         // 2) Get
101         getRes := getKey(client, GetKeyArgs{"User", 1})
102         fmt.Println(" GetKey(User,1) =>", getRes)
103
104         // 3) Delete
105         delRes := deleteKey(client, DeleteKeyArgs{"User", 1})
106         fmt.Println(" DeleteKey(User,1) =>", delRes)
107
108         // 4) Verify it's really deleted
109         postDel := getKey(client, GetKeyArgs{"User", 1})
110         fmt.Println(" GetKey(User,1) after Delete =>", postDel)
111         fmt.Println("== Done TestSetGetDelete ==\n")
112 }
113
114 func testMassSetAndGet(client *rpc.Client, bucketName string, count int) {
115         fmt.Printf("== Mass set/get test for %d items in bucket %q ==\n",
    count, bucketName)
116         startTime := time.Now()
117
118         // Bulk set
119         for i := 0; i < count; i++ {
120                 setRes := setKey(client, SetKeyArgs{
121                         BucketName: bucketName,
122                         Key:        i,
123                         Value:      "Item " + strconv.Itoa(i),
124                 })
125                 if setRes != "OK" {
126                         fmt.Printf(" Failed setKey at i=%d => %s\n", i,
    setRes)
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127                 }
128         }
129
130         // Bulk get
131         missing := 0
132         for i := 0; i < count; i++ {
133                 val := getKey(client, GetKeyArgs{
134                         BucketName: bucketName,
135                         Key:        i,
136                 })
137                 // If val is [FAIL or [ERROR, it indicates an issue
138                 if len(val) >= 5 && (val[:5] == "[FAIL" || val[:6] == "
    [ERROR") {
139                         missing++
140                 }
141         }
142
143         elapsed := time.Since(startTime)
144         fmt.Printf(" Mass set/get done in %v. Missing count=%d\n", elapsed,
    missing)
145         fmt.Println("== Done Mass set/get ==\n")
146 }
147
148 // ------------------------------------------------------
149 // main: orchestrates the test
150 // ------------------------------------------------------
151
152 func main() {
153         // Hard-coded addresses:
154         // - Leader is on :8000
155         // - Backup is on :8001
156         leaderAddr := "localhost:8000"
157         backupAddr := "localhost:8001"
158
159         // 1) Connect to the leader
160         leaderClient, err := rpc.Dial("tcp", leaderAddr)
161         if err != nil {
162                 log.Fatalf("Failed to connect leader @ %s: %v", leaderAddr,
    err)
163         }
164         fmt.Println("[Connected to leader @", leaderAddr, "]")
165
166         // 2) Basic Set/Get/Delete on Leader
167         testSetGetDelete(leaderClient)
168
169         // 3) Mass test
170         testMassSetAndGet(leaderClient, "BulkBucket", 20)
171
172         // ---------- NEW TEST CASES FOR GetStoreInfo ----------
173         fmt.Println("== Test #1: GetStoreInfo from the leader (should
    succeed) ==")
174         storeLeader := getStoreInfo(leaderClient)
175         fmt.Println(" Leader's store info =>", storeLeader)
176
177         fmt.Println("\n== Test #2: GetStoreInfo from backup (should fail or
    show 'Not the leader') ==")
178         backupClient, err := rpc.Dial("tcp", backupAddr)
179         if err != nil {
180                 fmt.Printf("[WARN] Could not connect to backup @ %s: %v\n",
    backupAddr, err)
181                 fmt.Println("Skipping backup storeInfo test.")
182         } else {
183                 storeBackup := getStoreInfo(backupClient)
184                 fmt.Println(" Backup's store info =>", storeBackup)
185                 backupClient.Close()
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186         }
187         // ------------------------------------------------------
188
189         // 4) Ask user to kill the leader
190         fmt.Println("\n[ACTION REQUIRED] Please kill/stop the leader node.
    Then press ENTER.")
191         bufio.NewReader(os.Stdin).ReadBytes('\n')
192
193         // 5) Wait for failover
194         fmt.Println("Waiting 5s to let cluster elect new leader on
    :8000...")
195         time.Sleep(5 * time.Second)
196
197         // 6) Connect to the new leader (still :8000)
198         newLeaderClient, err := rpc.Dial("tcp", leaderAddr)
199         if err != nil {
200                 log.Fatalf("Failed to connect new leader @ %s: %v",
    leaderAddr, err)
201         }
202         fmt.Println("[Connected to new leader @", leaderAddr, "]\n")
203
204         // 7) Verify data is consistent
205         fmt.Println("== Checking data from BulkBucket on new leader ==\n")
206         lastVal := getKey(newLeaderClient, GetKeyArgs{"BulkBucket", 20})
207         fmt.Println(" GetKey(BulkBucket,20) =>", lastVal)
208
209         // 8) Check store info again on new leader
210         fmt.Println("\n== Test #3: GetStoreInfo on new leader (post-
    failover) ==\n")
211         storeNewLeader := getStoreInfo(newLeaderClient)
212         fmt.Println(" NewLeader store info =>", storeNewLeader)
213
214         // 9) Additional sets/deletes on new leader
215         fmt.Println("\n== Testing another SET/DELETE on new leader ==\n")
216         setRes := setKey(newLeaderClient, SetKeyArgs{"FailoverBucket", 1,
    "DataAfterFailover"})
217         fmt.Println(" SetKey(FailoverBucket,1) =>", setRes)
218
219         delRes := deleteKey(newLeaderClient, DeleteKeyArgs{"FailoverBucket",
    1})
220         fmt.Println(" DeleteKey(FailoverBucket,1) =>", delRes)
221
222         postDel := getKey(newLeaderClient, GetKeyArgs{"FailoverBucket", 1})
223         fmt.Println(" GetKey(FailoverBucket,1) =>", postDel)
224
225         newLeaderClient.Close()
226         leaderClient.Close()
227
228         fmt.Println("\n=== End of All Tests ===")
229 }
230
```