

# Network Management Project

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25. November 2013

## 1 Task I

Listing 1: inspired by [1]

```
1 messages:
2 (new, n)
3 (fail, n)
4 (update, n; l; p; a)
5 (localvar, x)
6
7 procedure GAP( )
8   T := empty table;
9   if v = root then
10     addEntry(root, parent, -1, undef);
11     addEntry(root, self, 0, undef);
12   else
13     addEntry(v, self, undef, undef);
14   end if
15   vector := updateVector();
16   send (update, v; vector) to all neighbors;
17   A.initiate();
18   while true do
19     read message;
20     switch (message)
21       case (new, from):
22         addEntry(from, peer, undef, undef);
23         send (update, v; vector) to from;
24       case (fail, from):
25         removeEntry(from);
26       case (localvar, x):
27         empty;
28       case (update, from; level; parent; aggregate):
29         updateEntry(from; level; parent; aggregate);
30     end switch
31     restoreTableInvariant();
32     A.aggregate(); if (v = root) then A.global();
33     newvector := updateVector();
34     if newvector 6 = vector then
35       send (update, v; newvector) to all neighbors;
36       vector := newvector;
37     end if
38   end while
39 end procedure
```

- implementation details
- compare performance for  $R_1, R_2$ 
  - time series of  $f(t)$  and  $f(t)$  for  $r = \{0.2, 0.4, 0.8\}$  and  $\{R_1, R_2\}$  from the first 5 min
  - trade off plot for  $R_1, R_2$
  - density plot for  $r = \{0.2, 0.4, 0.8\}$  and  $\{R_1, R_2\}$

## 2 Task II

- pseudo code!
- implementation details
- compare performance for  $R_1, R_2$ 
  - time series of  $f(t)$  and  $f(t)$  for  $r = \{0.2, 0.1, 0.05, 0.025\}$  and  $\{R_1, R_2\}$  from the first 5 min
  - trade off plot for  $R_1, R_2$
  - density plot for  $r = \{0.1, 0.05, 0.025\}$  and  $\{R_1, R_2\}$

## 3 Task III

- pseudo code!
- implementation details
- compare performance for  $R_1, R_2$ 
  - time series of  $f(t)$  and  $f(t)$  for  $r = \{0.2, 0.1, 0.05, 0.025\}$  and  $\{R_1, R_2\}$  from the first 5 min
  - trade off plot for  $R_1, R_2$
  - density plot for  $r = \{0.1, 0.05, 0.025\}$  and  $\{R_1, R_2\}$

## 4 Summary

- Compare TaskI, II, III
- Compare  $R_1, R_2$  globally

## Literatur

- [1] R. Stadler, "Protocols for distributed management," 2012.