```
1   --- check for dangling edges
2   --- find all activity edges where source or target is null
3   foreach e = (src, m, tar)|e ∈ E^adhmr {
4       if src = ε ∨ tar = ε {
5           E^actDhmr = E^actDhmr \ e }
6   }
7   --- check for orphaned cliques
8   --- select all possible cliques where at least one activity edge has a target
9   --- that is the same also the source of some other activity edge
10  foreach V ⊆ E^actDhmr |V = {e_1, e_2, … , e_n}: e_i = (src^ei, m^ei, tar^ei) ∧ tar^ei = src^ei+1
11      --- assume V is an orphaned clique
12      boolean inputFound = false
13      boolean outputFound = false
14      foreach e_i ∈ V {
15          --- check if a path can be traced to at least one input pin
16          if src^ei = p ∈ P^ad { inputFound = true }
17          if tar^ei = p ∈ P^ad { outputFound = true }
18      }
19      if inputFound ∨ outputFound = false { E^adhmr = E^adhmr \ V }
20  }
21  --- check for orphaned activities, pins, control nodes
22  --- find all activities that are not source or target of an activity edge
23  foreach a ∈ A^actDhmr {
24      --- assume a is orphaned
25      boolean orphaned = true
26      foreach e = (src, m, tar)|e ∈ E^actDhmr {
27         --- if src or tar point to a, then a isn't orphaned
28         if src = a ∨ tar = a {
29             orphaned = false
30         }
31      --- if no activity edge with pointing to a was found, it will be removed
32     if orphaned := true {
33         A^actDhmr = A^actDhmr \ a
34     }
35  }
36  --- find all pins that are not source or target of an activity edge
37  foreach p ∈ P^adhmr {
38      --- assume p is orphaned
39      boolean orphaned = true
40      foreach e = (src, m, tar)|e ∈ E^actDhmr {
41         --- if src or tar point to p, then p isn't orphaned
42         if src = p ∨ tar = p {
43             orphaned = false
44         }
45      --- if no activity edge with pointing to p was found, it will be removed
46     if orphaned = true {
47         P^actDhmr = P^actDhmr \ p
48     }
49  }
50  --- find all control nodes that are not source or target of an activity edge
51  foreach c ∈ C^actDhmr {
52      --- assume c is orphaned
53      boolean orphaned = true
```

```
54          foreach e = (src, m, tar)|e ∈ E^actD^hmr {
55              --- if src or tar point to c, then c isn't orphaned
56              if src = c ∨ tar = c {
57                  orphaned = false
58              }
59          --- if no activity edge with pointing to p was found, it will be removed
60          if orphaned = true {
61              C^actD^hmr = C^actD^hmr \ c
62          }
63      }
64      return actD^hmr
65  }
```

Listing 5 Pseudo-Code Signature chk of the QVTo Script q^{hmr}.