Praktikum 12

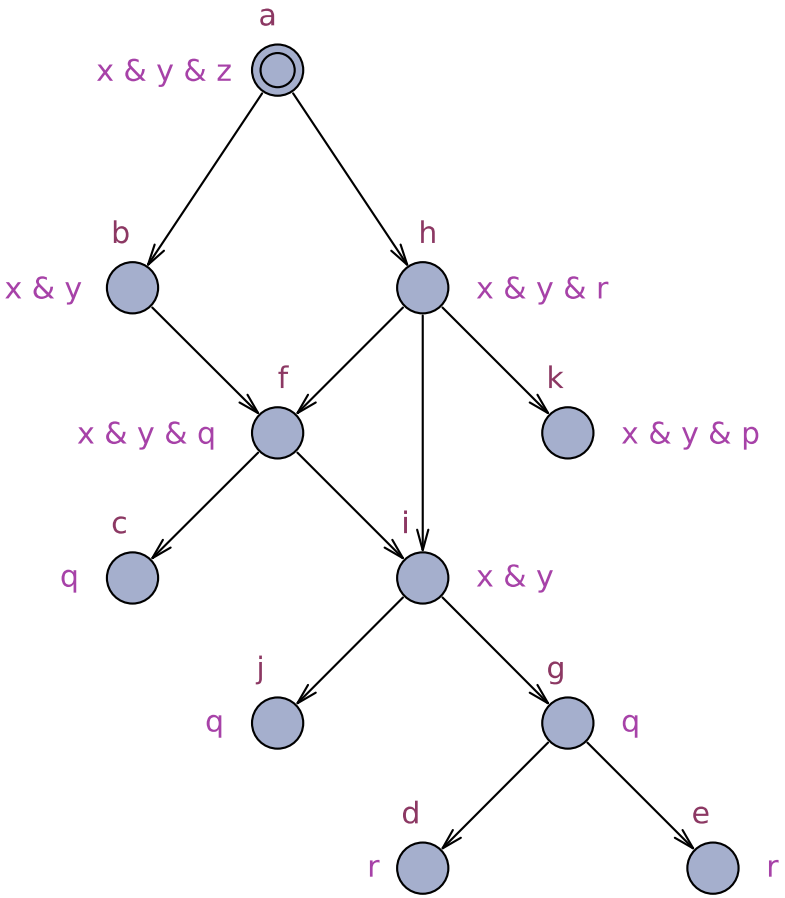
1. Tutvuda Loengu nr. 10 „Loogika valemite interpreteerimine“ (peatükk 12.3) materjaliga
2. Olgu Kripke struktuur esitatud faktimallidega:

```
transition(State_i, State_j).
state(State,Label_list).        % Label_list  - list of atomic proposition labels
```

Näide:

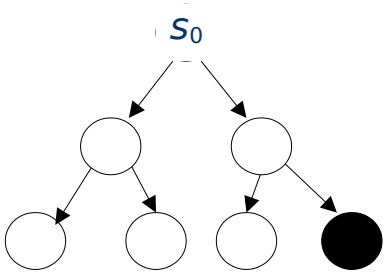
```
transition(a,b).
transition(a,h).
transition(h,k).
transition(h,f).
transition(b,f).
transition(h,i).
transition(f,i).
transition(f,c).
transition(i,g).
transition(i,j).
transition(g,d).
transition(g,e).

state(a,[x,y,z]).
state(b,[x,y]).
state(c,[q]).
state(d,[r]).
state(e,[r]).
state(f,[x,y,q]).
state(g,[q]).
state(h,[x,y,r]).
state(i,[x,y]).
state(j,[q]).
state(k,[x,y,p]).
```



3. Realiseerida $M,s_0 \models$ **E<>** g algoritm:

$W_{-1} := \varnothing$
$W_0 := [|\varphi|]$
$i := 0$
while $W_{i+1} \neq W_i \ \wedge S_0 \cap W_{i+1} = \varnothing$
do
$i := i + 1$
$W_{i+1} := \text{pre}(W_i) \cup W_i$
od
if $S_0 \cap W_{i+1} \neq \varnothing$ then write 'Formula **E<>** φ is valid'
else write 'Formula **E<>** φ is invalid'



$M,s_0 \models$ **E<>** g

4. Algoritmi realiseerimiseks kasutada hulgateooria tehteid ja eel-kujutuse **`pre`** arvutamiseks järgmist reeglit.

```
pre(Rel,Set, SetA):-
      assert(pre_set([])),
      pre1(Rel,Set),
      retract(pre_set(A)),list_to_set(A,SetA).
```

kus

```
      pre1(_,[]).
      pre1(Rel,[El|Set]):-
            Rel_i=..[Rel,Pre_el,El],
            call(Rel_i),
            arg(1,Rel_i,Prel),
            retract(pre_set(P)),
            assert(pre_set([Prel|P])),
            fail.
      pre1(Rel,[El|Set]):-
            pre1(Rel,Set).
```

5. Kirjutada reegel check/3

```
?- check([x,y,x], [q], T).
T=t
```