Praktikumi nr 10 ülesanne

1. Tutvuda Loengu nr 11 materjaliga
2. Olgu Kripke struktuur esitatud faktimallidega:

```
transition(State_i, State_j).
state(State,Lable_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'

4. Algoritmi realiseerimiseks kasutada hulgateooria tehteid ja eel-kujutuse `pre` arvutamiseks järgmist reeglit.
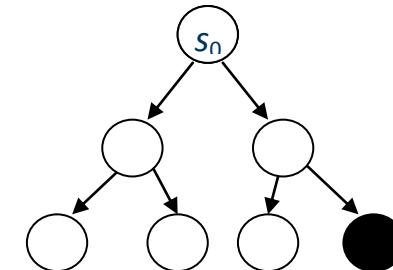
$$M, s_0 \models \textbf{E<>} \; g$$

```
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).
```