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Assignment 01 - Internal DSL

(1) A one-paragraph summary of how you solved the exercise
I know I did not solve the test, but I gave it my best shot. I think there is something I have misunderstood about how the machine works all together, even though I asked some classmates to get a better understanding of it. I would very much like to have a better explanation on each method or something like that to help me understand what each method in the java classes handed-out should do. The examples from “mini-state-machine” and “CDPlayer” did not help me as much as I would have liked.

(2) Your status in terms of which unit tests pass
The status in terms of which unit tests passed isn’t that long.
From test CDPlayerTest.java I passed no test

From test MachineInterpreterTest.java I pass the following tests:
- startInitState
- eventNoTransition
- eventTransition
- listOfEvents
- chooseTransition
- initVariable

From test MachineStructureTest.java I pass the following tests:
- emptyMachine
- states
- initialFirstState
- initialState
- getState
- noTransitions
- transitions
- noVariables
- addVariable

A coverage on the test package is 50.4%

(3) A link to an online version of your source code
Link to github with source code:
https://github.com/mikk3l1/assignment1-main

(4) the source code of your project (we need both the link to the online version and the source code in the pdf).
See point 3. and the attached files in the zip folder for source code in pdf format.
The pdfs of the source code is on github as well

```java
package main;

import main.metamodel.Transition;
import main.metamodel.Machine;
import main.metamodel.State;

public class MachineInterpreter {

    private Machine machine;
    private State currentState;

    public void run(Machine m) {
        // TODO Auto-generated method stub
        this.machine = m;
        currentState = m.getInitialState();
    }

    public State getCurrentState() {
        // TODO Auto-generated method stub
        return currentState;
        //return null;
    }

    public void processEvent(String string) {
        // TODO Auto-generated method stub
        for (Transition t: currentState.getTransitions()) {
            if (t.getEvent().equals(string)) {
                //t.effect();
                currentState = t.getTarget();
                return;
            }
        }
        System.err.println("Unhandled event " + string);

    }

    public int getInteger(String string) {
        // TODO Auto-generated method stub
        return 0;
    }

}
```

```java
package main;

import java.util.ArrayList;

public class StateMachine {

    private State current;
    private State initial;
    private String currentEvent;
    private Map<String, State> states = new HashMap<>();
    private List<String> integers = new ArrayList<String>();

    public StateMachine() { }

    private State getState(String name) {
        if(!states.containsKey(name)) {
            states.put(name, new State(name));
        }
        return states.get(name);
    }


    public Machine build() {
        // TODO Auto-generated method stub
        return new Machine(states.values(), initial, integers);
        //return null;
    }

    public StateMachine state(String string) {
        // TODO Auto-generated method stub
        current = getState(string);
        return this;
        //return null;
    }

    public StateMachine initial() {
        // TODO Auto-generated method stub
        initial = current;
        return this;
        //return null;
    }

    public StateMachine when(String string) {
        // TODO Auto-generated method stub
        currentEvent = string;
        return this;
        //return null;
    }

    public StateMachine to(String string) {
```

```
58          // TODO Auto-generated method stub
59          Transition t = new Transition(currentEvent, getState(string));
60          current.addTransition(t);
61          return this;
62          //return null;
63      }
64
65      public StateMachine set(String string, int i) {
66          // TODO Auto-generated method stub;
67          states.put(string, new State(Integer.toString(i)));
68  //      Transition t = new Transition(currentEvent, getState(string));
69  //      current.addTransition(t);
70          return this;
71
72
73  //      states.put(string, new State(Integer.toString(i)));
74  //      return this;
75  //      return null;
76      }
77
78      public StateMachine integer(String string) {
79          // TODO Auto-generated method stub
80          integers.add(string);
81          return this;
82          //return null;
83      }
84
85      public StateMachine increment(String string) {
86          // TODO Auto-generated method stub
87          int i = Integer.parseInt(states.get(string).getName().toString());
88          System.out.println(i);
89          return null;
90      }
91
92      public StateMachine decrement(String string) {
93          // TODO Auto-generated method stub
94          return null;
95      }
96
97      public StateMachine ifEquals(String string, int i) {
98          // TODO Auto-generated method stub
99          return null;
100     }
101
102     public StateMachine ifGreaterThan(String string, int i) {
103         // TODO Auto-generated method stub
104         return null;
105     }
106
107     public StateMachine ifLessThan(String string, int i) {
```

```
108         // TODO Auto-generated method stub
109         return null;
110     }
111
112 }
113
```

```java
package main.metamodel;

import java.util.ArrayList;

public class Machine {

    private List<State> states = new ArrayList<State>();
    private State initialState;
    private List<String> integers = new ArrayList<String>();

    public Machine(Collection<State> states, State initialState,
  Collection<String> integers) {
        super();
        this.integers.addAll(integers);
        this.states.addAll(states);
        this.initialState = initialState;
    }


    public List<State> getStates() {
        // TODO Auto-generated method stub
        return states;
        //return null;
    }

    public State getInitialState() {
        // TODO Auto-generated method stub
        return initialState;
        //return null;
    }

    public State getState(String string) {
        // TODO Auto-generated method stub
        for (State state : states) {
            if (state.getName().equals(string)) {
                return state;
            }
        }
        return null;
    }

    public int numberOfIntegers() {
        // TODO Auto-generated method stub
        return integers.size();
    }

    public boolean hasInteger(String string) {
        // TODO Auto-generated method stub
        for (String str: integers) {
            if (str.equals(string)) {
```

```
52                  return true;
53              }
54          }
55          return false;
56      }
57  }
58
```

```java
package main.metamodel;

import java.util.ArrayList;


public class State {

    private String name;
    private List<Transition> transitions = new ArrayList<>();

    public State(String name) {
        super();
        this.name = name;
    }

    public Object getName() {
        // TODO Auto-generated method stub
        return name;
        //return null;
    }

    public void addTransition(Transition t) {
        this.transitions.add(t);
    }


    public List<Transition> getTransitions() {
        // TODO Auto-generated method stub
        return transitions;
        //return null;
    }

    public Transition getTransitionByEvent(String string) {
        // TODO Auto-generated method stub
        for (Transition transition : transitions) {
            if (transition.getEvent().equals(string)) {
                return transition;
            }
        }
        return null;
    }

}
```

```java
package main.metamodel;


public class Transition {

    private String event;
    private State to;

    public Transition(String event, State to) {
        super();
        this.event = event;
        this.to = to;
    }

    public Object getEvent() {
        // TODO Auto-generated method stub
        return event;
        //return null;
    }

    public State getTarget() {
        // TODO Auto-generated method stub
        return to;
        //return null;
    }

    public boolean hasSetOperation() {
        // TODO Auto-generated method stub
        if (this.event.equals("SET")) {
            return true;
        }
        return false;
    }

    public boolean hasIncrementOperation() {
        // TODO Auto-generated method stub
        if (this.event.equals("increment")) {
            return true;
        }
        return false;
    }

    public boolean hasDecrementOperation() {
        // TODO Auto-generated method stub
        if (this.event.equals("decrement")) {
            return true;
        }
        return false;
    }

```

```
51      public Object getOperationVariableName() {
52          // TODO Auto-generated method stub
53          System.out.println(this.getEvent()); // returns "SET"
54          System.out.println(this.getTarget()); // returns memory address
55          System.out.println(this.getTarget().getName()); // returns "state 2"
56          System.out.println(this.getTarget().getTransitions()); // returns [
  ]
57
58          return null;
59      }
60
61      public boolean isConditional() {
62          // TODO Auto-generated method stub
63          return false;
64      }
65
66      public Object getConditionVariableName() {
67          // TODO Auto-generated method stub
68          return null;
69      }
70
71      public Integer getConditionComparedValue() {
72          // TODO Auto-generated method stub
73          return null;
74      }
75
76      public boolean isConditionEqual() {
77          // TODO Auto-generated method stub
78          return false;
79      }
80
81      public boolean isConditionGreaterThan() {
82          // TODO Auto-generated method stub
83          return false;
84      }
85
86      public boolean isConditionLessThan() {
87          // TODO Auto-generated method stub
88          return false;
89      }
90
91      public boolean hasOperation() {
92          // TODO Auto-generated method stub
93          return false;
94      }
95
96  }
97
```