

Solution proposal

Oblig-I Modeling

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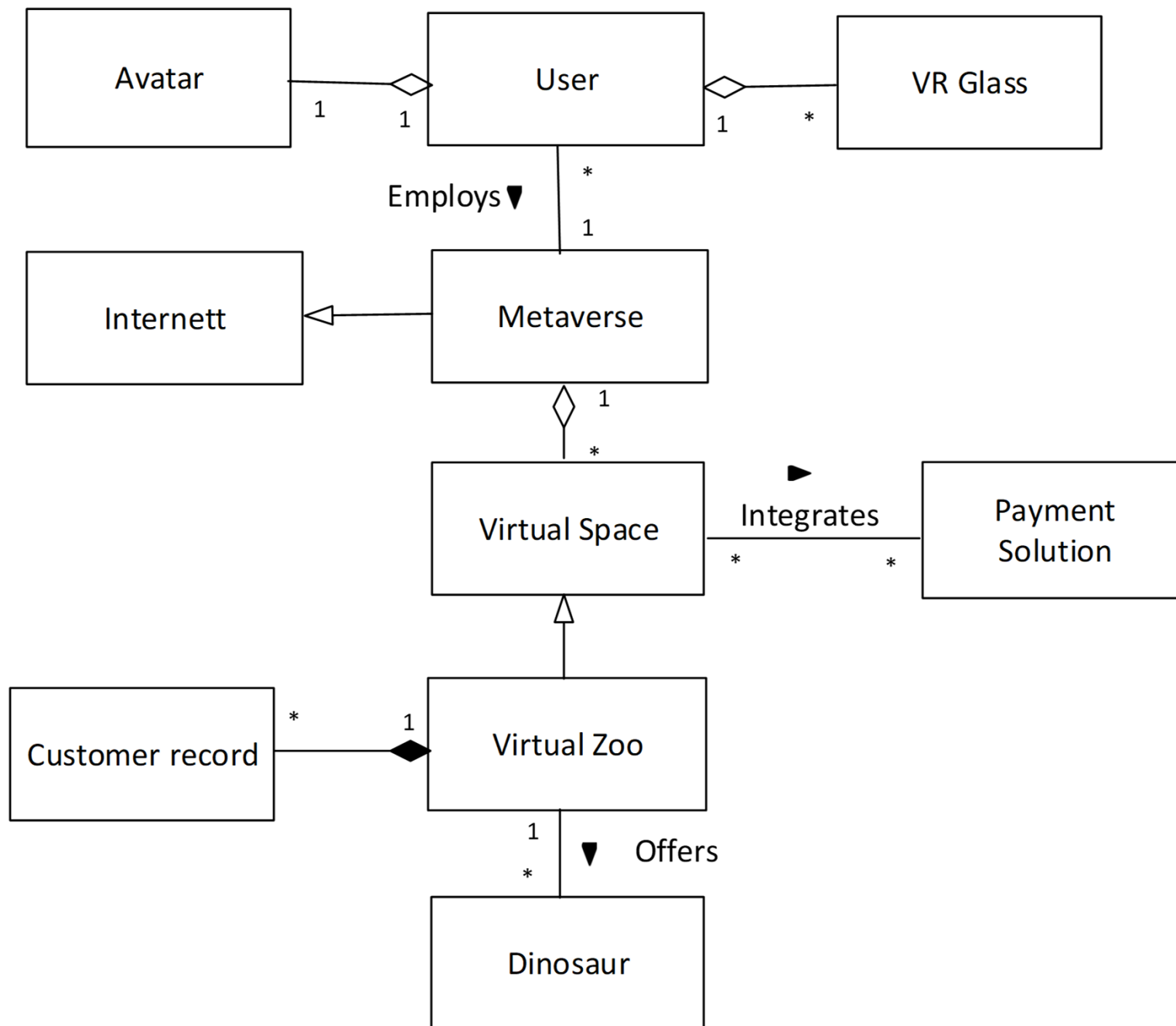
Task I

Make a class-diagram describing the relevant concepts.

The class-diagram should at least represent the following concepts: Metaverse, Virtual Space, Avatar, Virtual Zoo, VR-glasses, Dinosaur, Payment Solution.

The class-diagram should contain the generalization relation and illustrate correct use of both composition and aggregation.

All associations should be decorated with multiplicities.



Remember

- Composition has by default multiplicity 1 at the diamond end
- The same class cannot be associated with two different "diamond-end" classes
- Class names should always be in singular

Task II

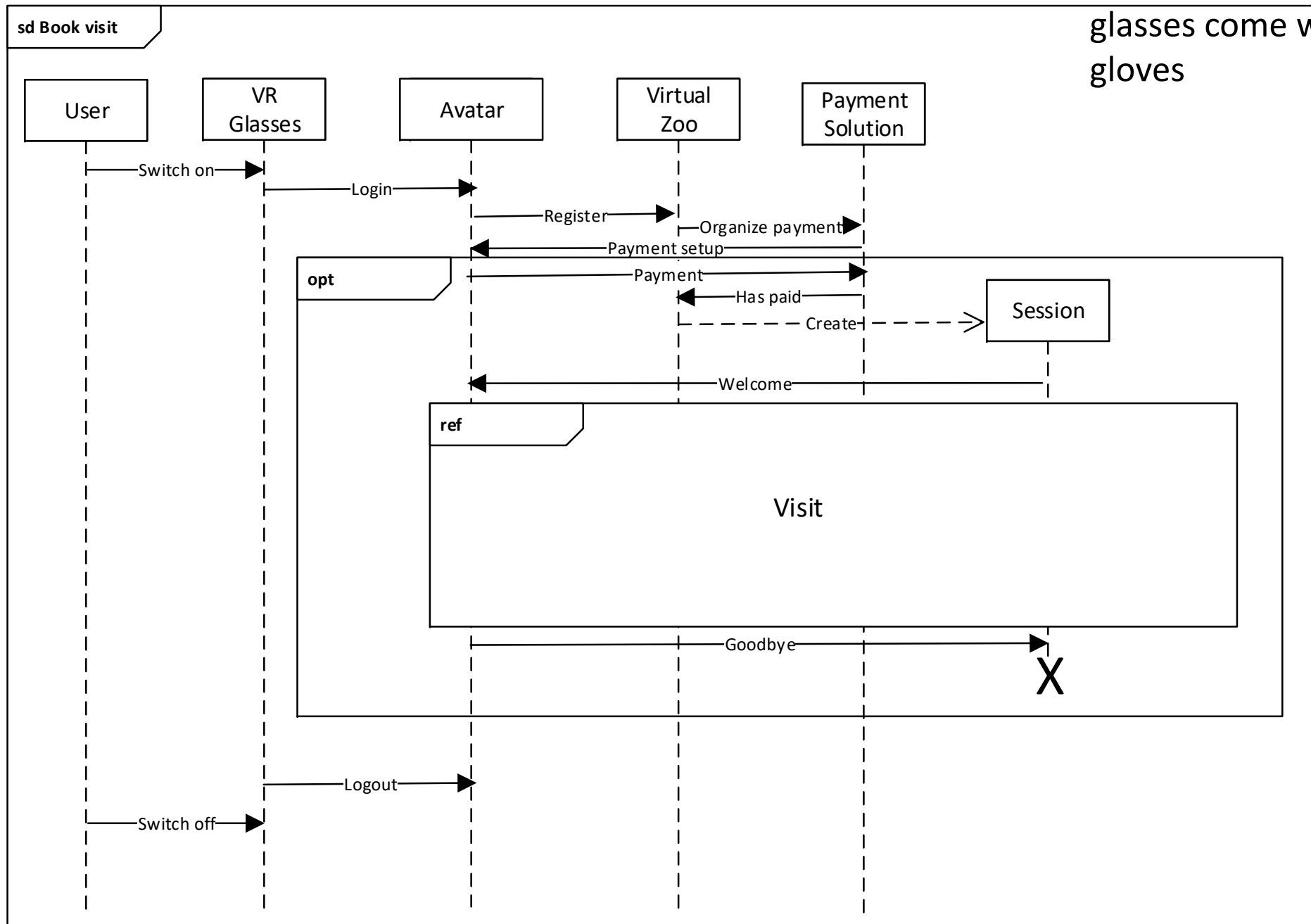
Make a sequence diagram (or several) describing a virtual visit to the zoo.

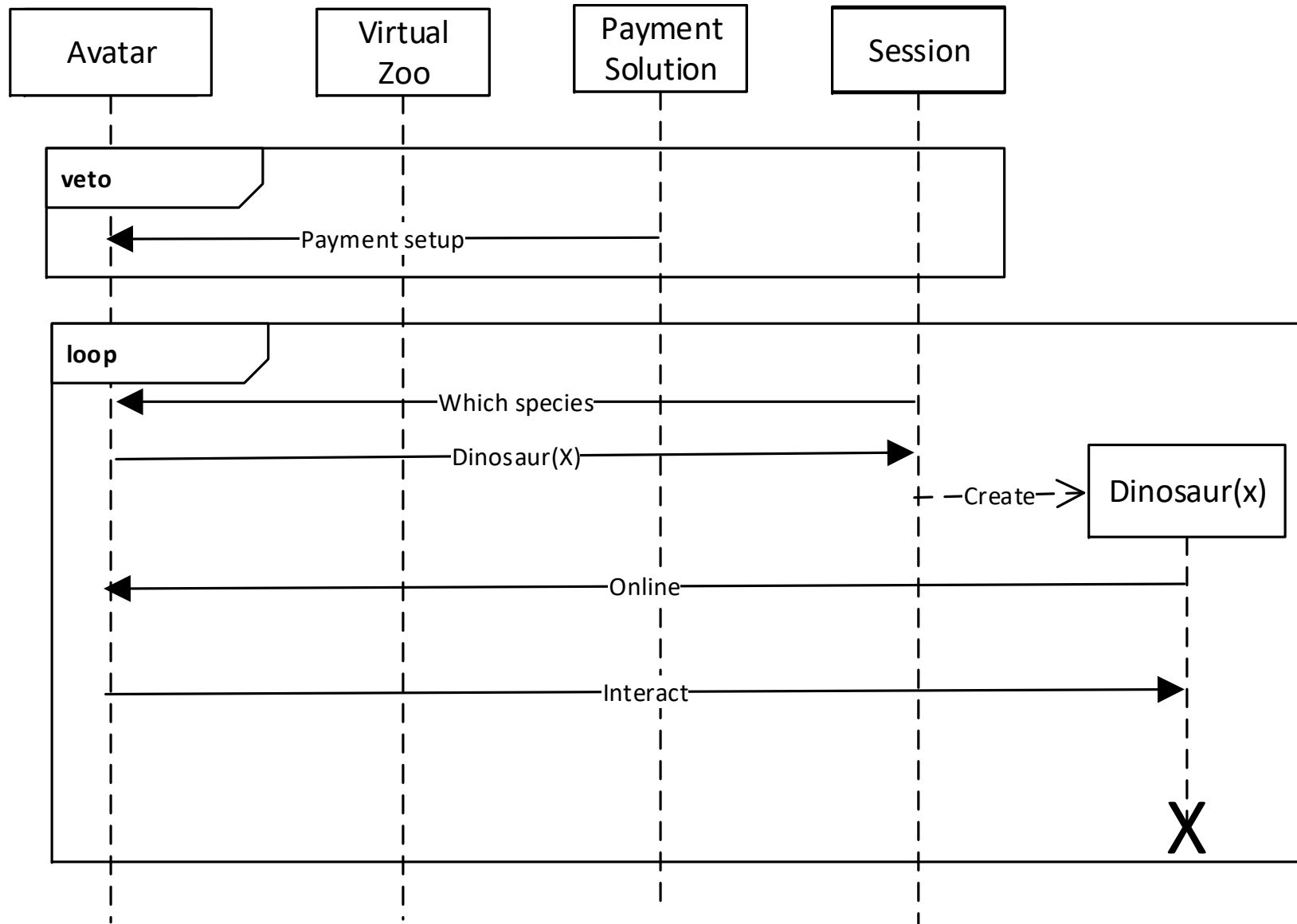
There should at least be lifelines for Avatar, Virtual Zoo, VR-glasses, Dinosaur, and Payment Solution.

The sequence diagrams should illustrate correct use of at least referencing (the referenced sequence diagrams should also be specified in full), loop, lifeline creation and termination, and opt.

The sequence diagram should also describe some negative behaviour.

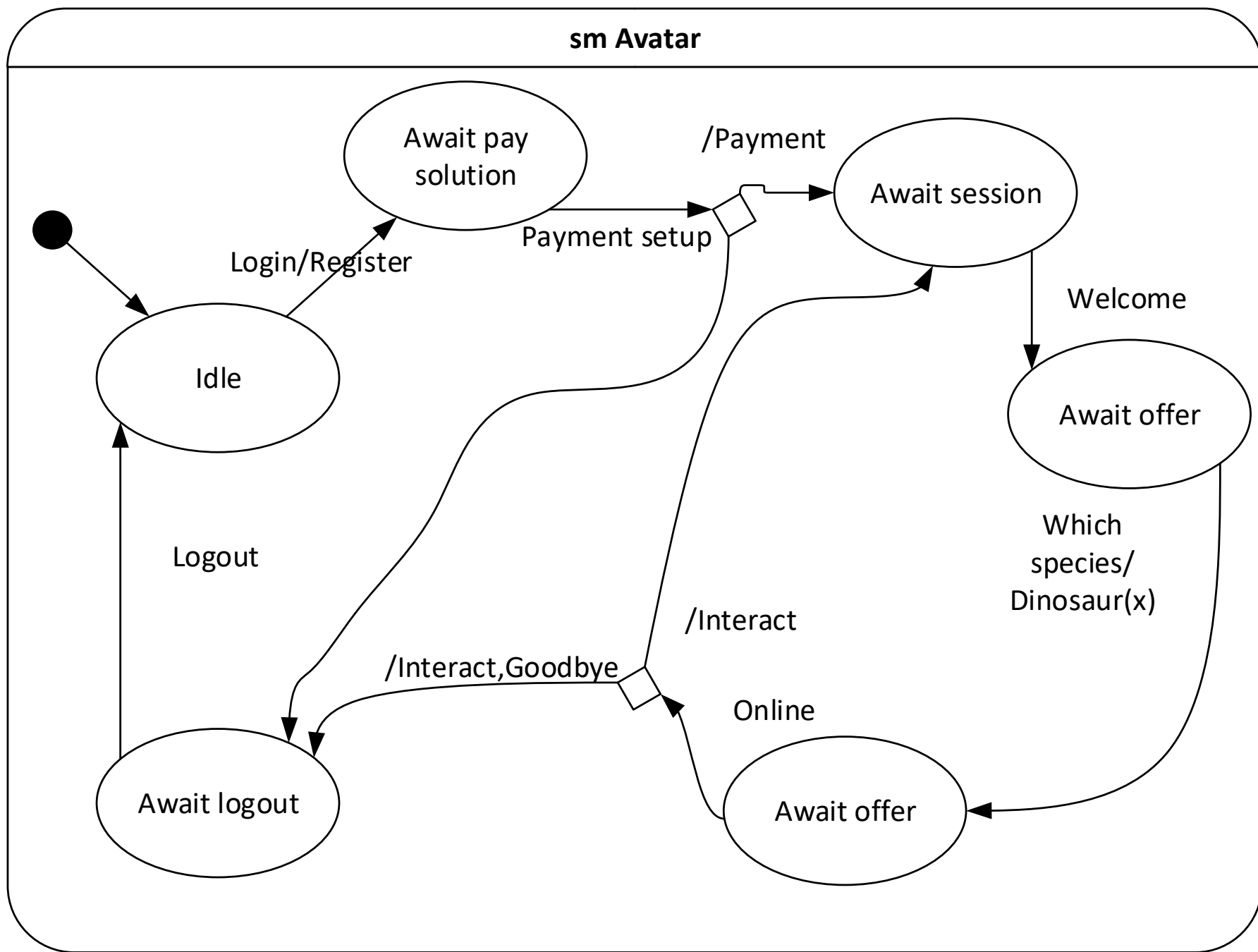
I assume the VR glasses come with gloves

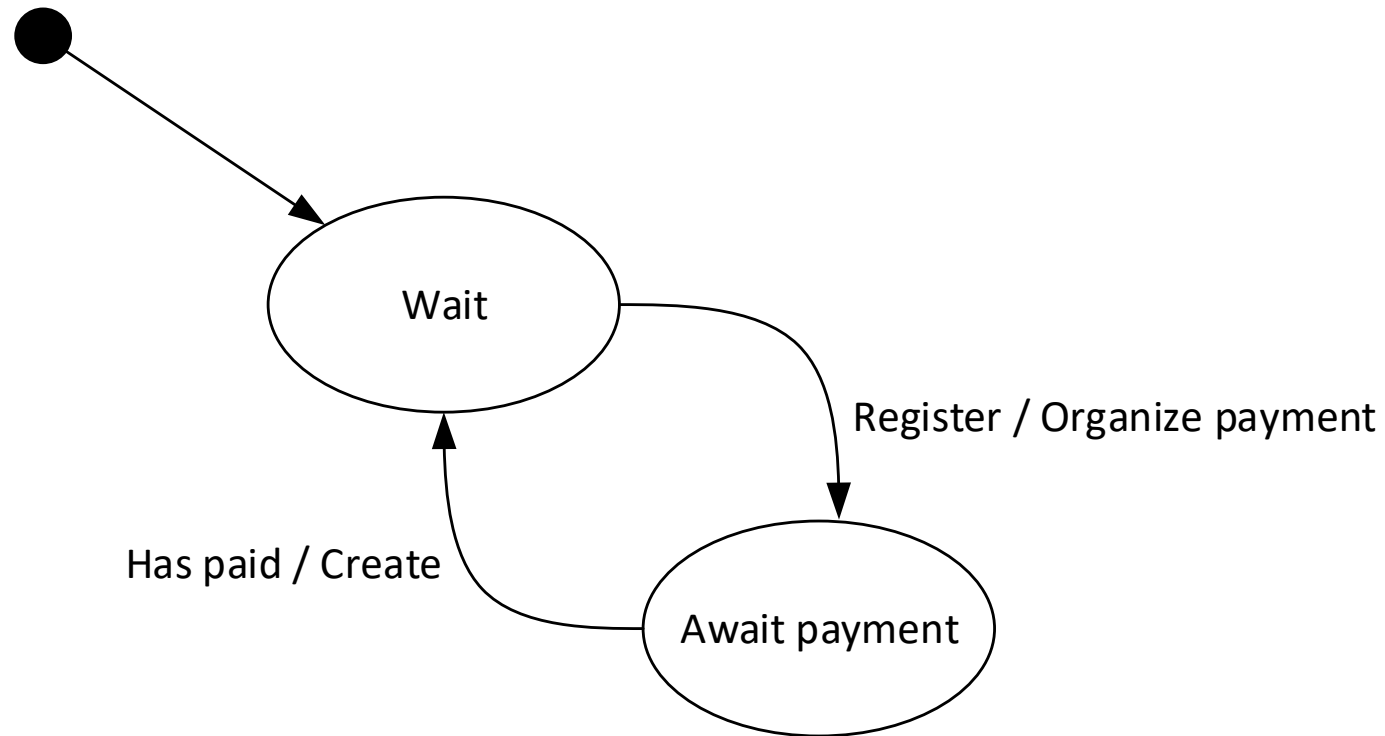


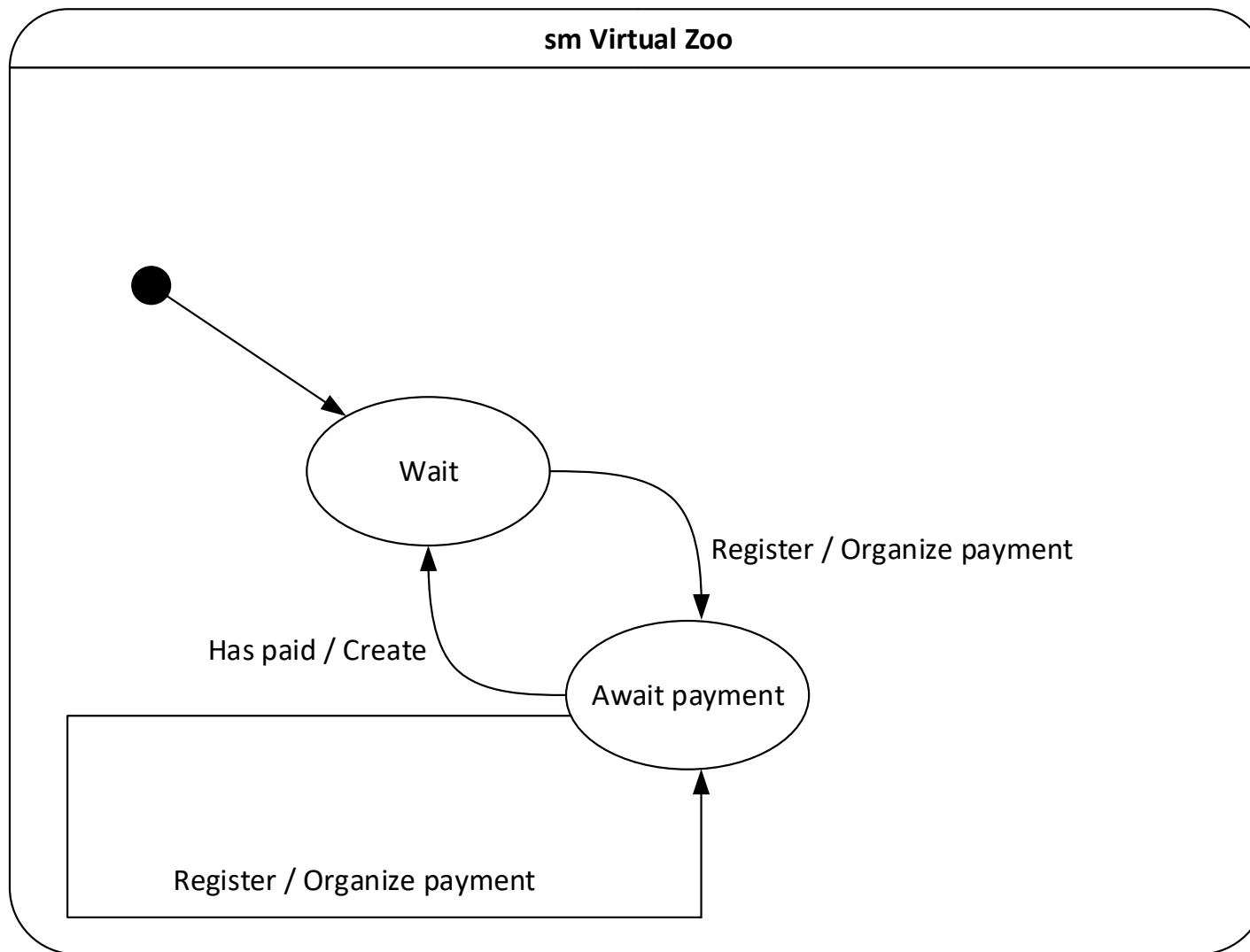


Task III

- Make a communicating state-machine that correctly reflects all the traces specified by the sequence diagrams for the lifeline Virtual Zoo.
- Make a communicating state-machine that correctly reflects all the traces specified by the sequence diagrams for the lifeline Avatar.
- The two state-machines must allow any trace allowed by the respective lifelines in the sequence diagrams but may have additional traces.
- Remember that the machines should communicate the messages specified by the sequence diagrams. Hence, an input signal (output signal) in a state machine should be the reception (sending) of a message in a sequence diagram.







The machine on the previous slide solves the question, but is not very practical because it gets stuck if payment is not received. The machine on this slide does not suffer from that weakness.

Remember

- Any positive behaviour of the relevant lifeline should be allowed
- Any negative behaviour of the relevant lifeline should not be allowed
- The signals in the state machines should be messages in the sequence diagrams
- The state machines must be reactive
- The initial transition in a state machine may send signals