

CAF_C++ Actor Framework

An Open Source Implementation
of the Actor Model in C++

Introduction & Demo

21st of April 2016

C++ Actor Model

- <https://www.actor-framework.org/>
- Recommend:

Hewitt, Meijer and Szyperski: The Actor Model (everything ...



https://www.youtube.com/watch?v=7erJ1DV_Tlo

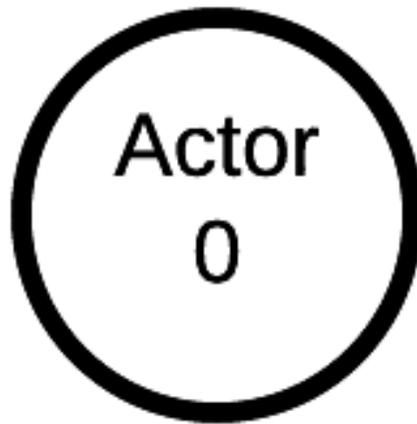
21 nov. 2012 - Geüpload door jasonofthel33t

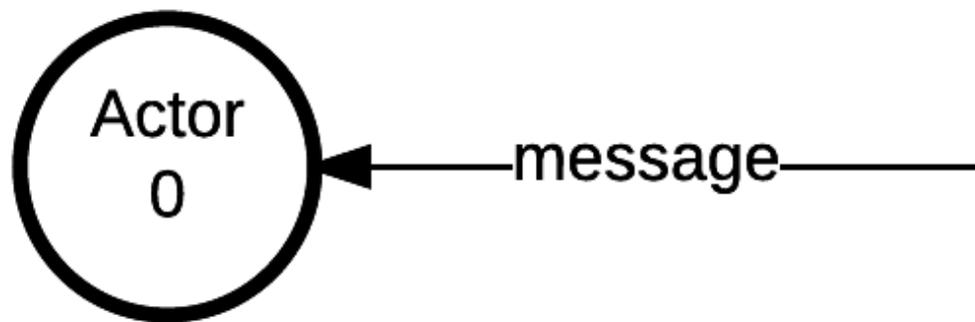
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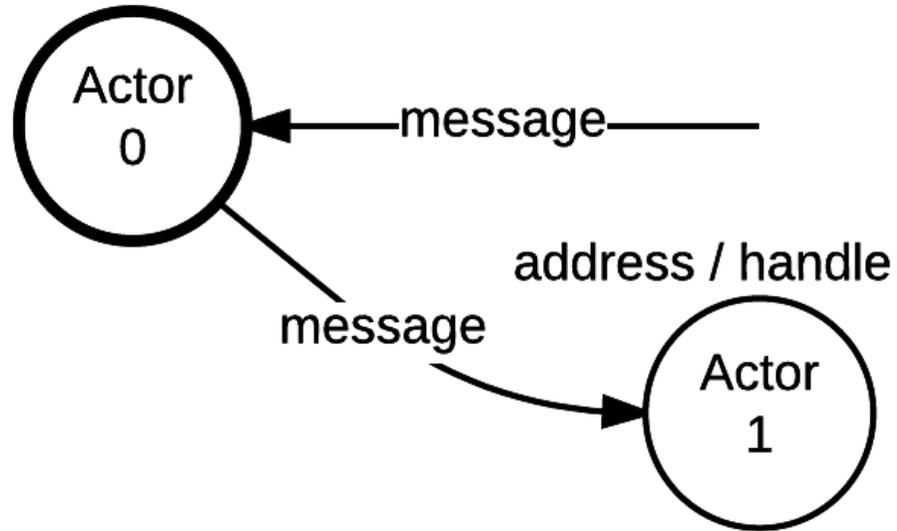
[http://channel9.msdn.com/Shows/Going+Deep/Hewitt-Meijer-and-Szyperski-The-Actor ...](http://channel9.msdn.com/Shows/Going+Deep/Hewitt-Meijer-and-Szyperski-The-Actor...)

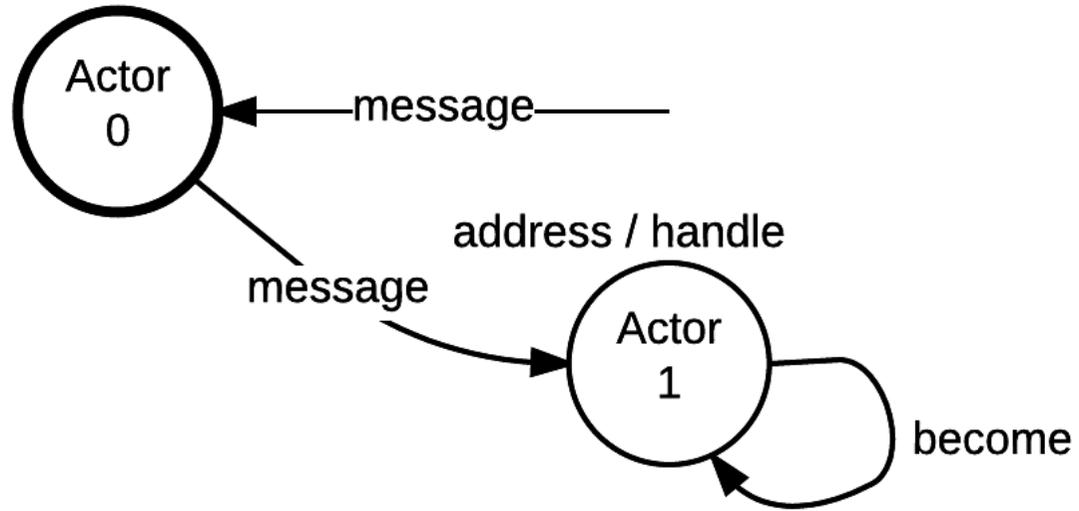
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- You may know the Actor Model from Erlang.

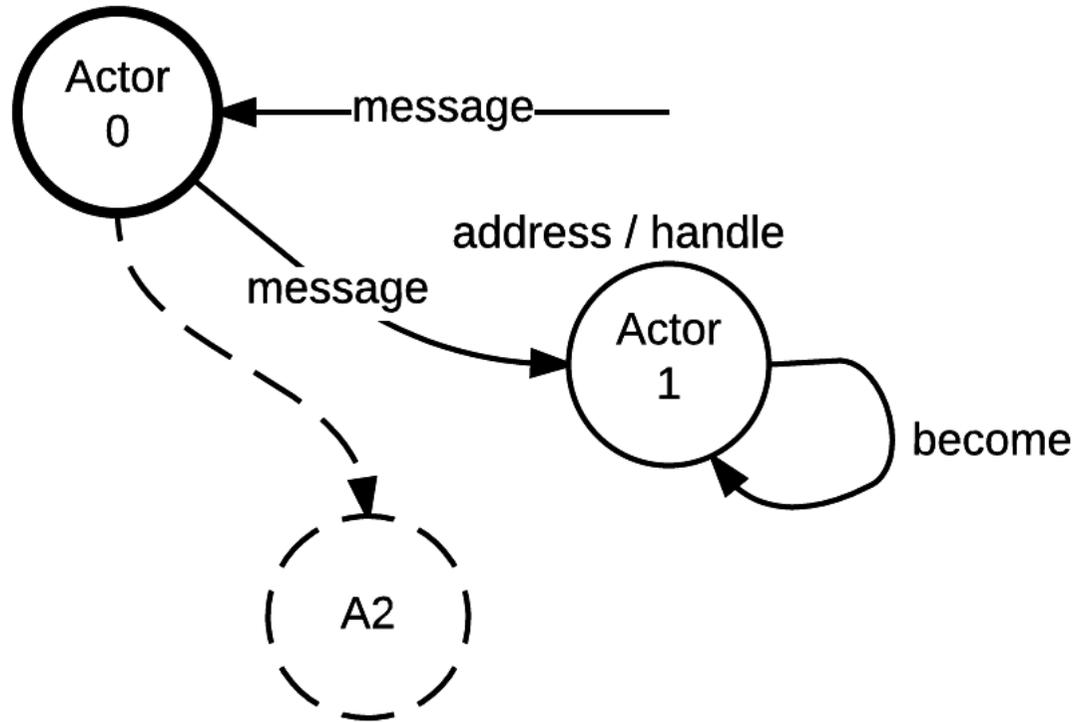
What is an actor?

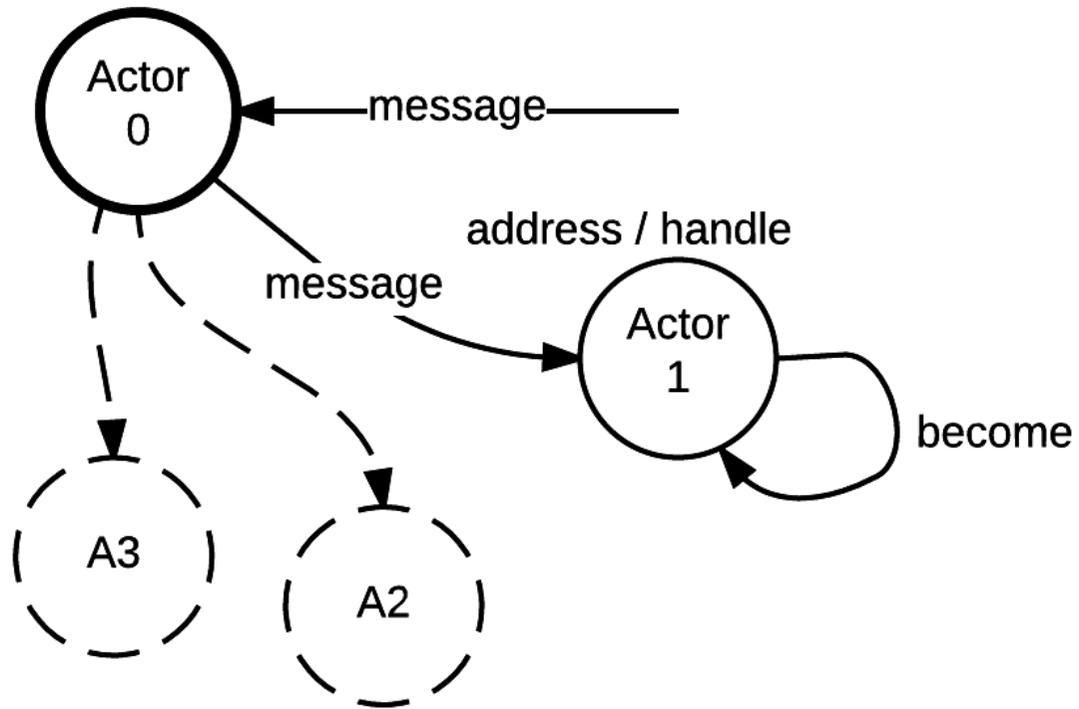


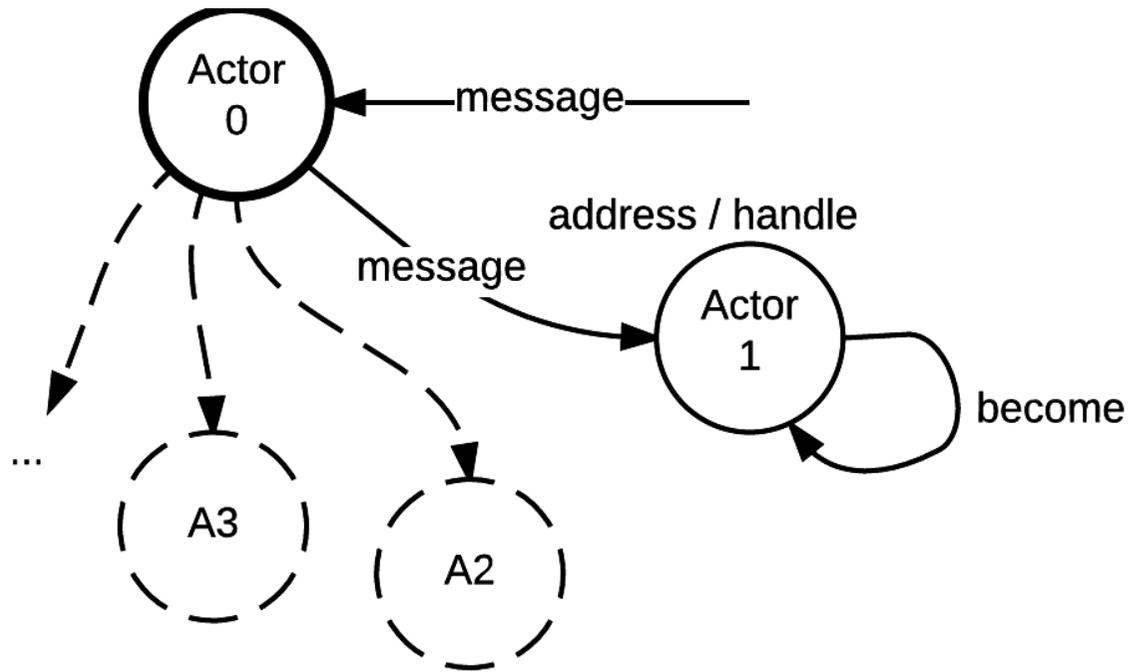








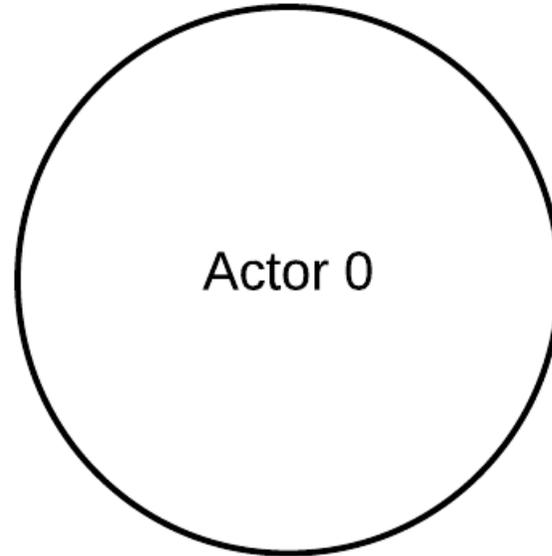




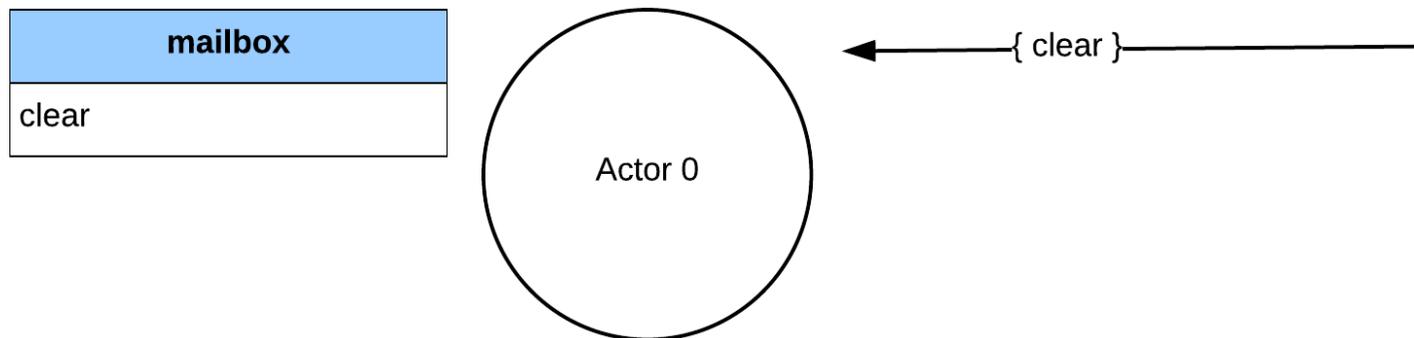
Scheduler

- Spawning an actor is lightweight.
- Uses a thread-pool with work-stealing scheduler by default
- You have different options and tweak for specific needs.

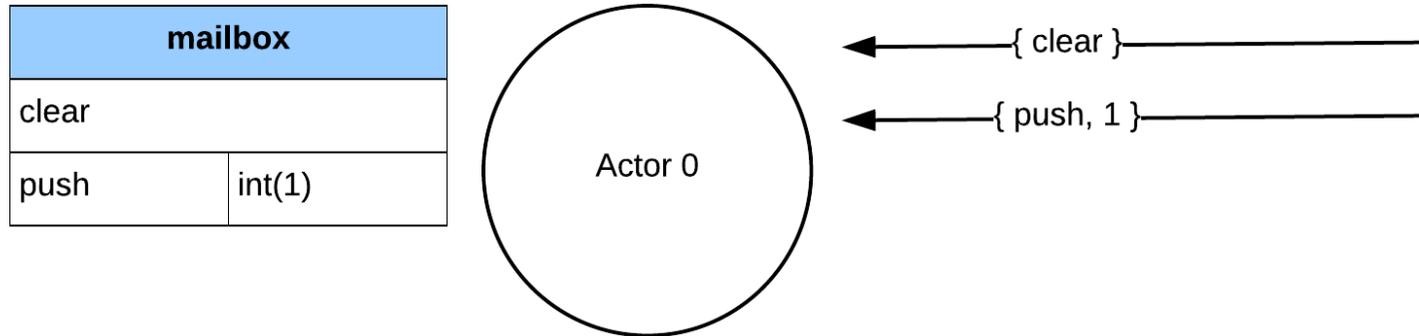
Example



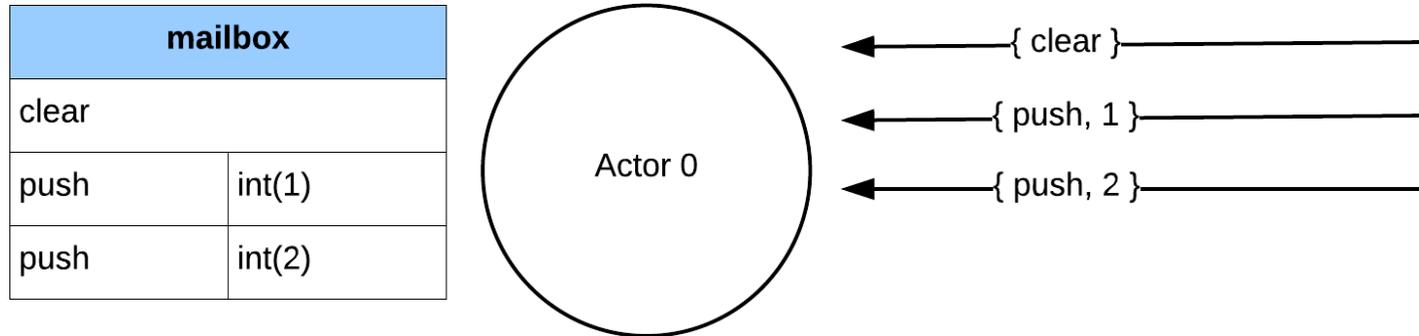
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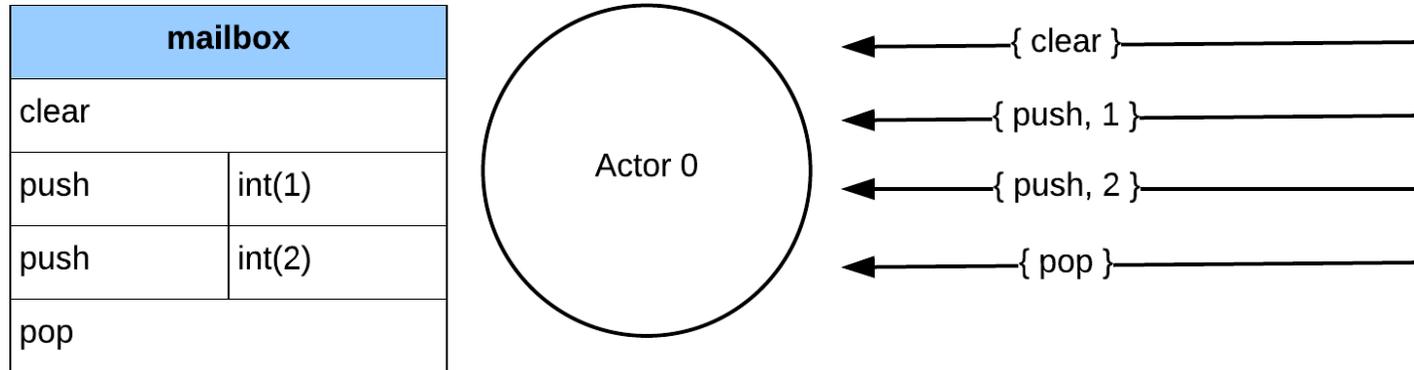
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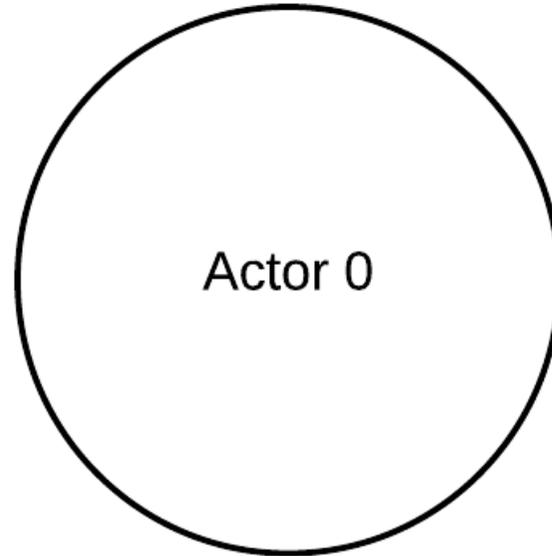


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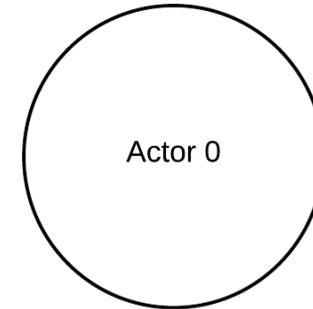
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clear	
push	int(1)
push	int(2)
pop	



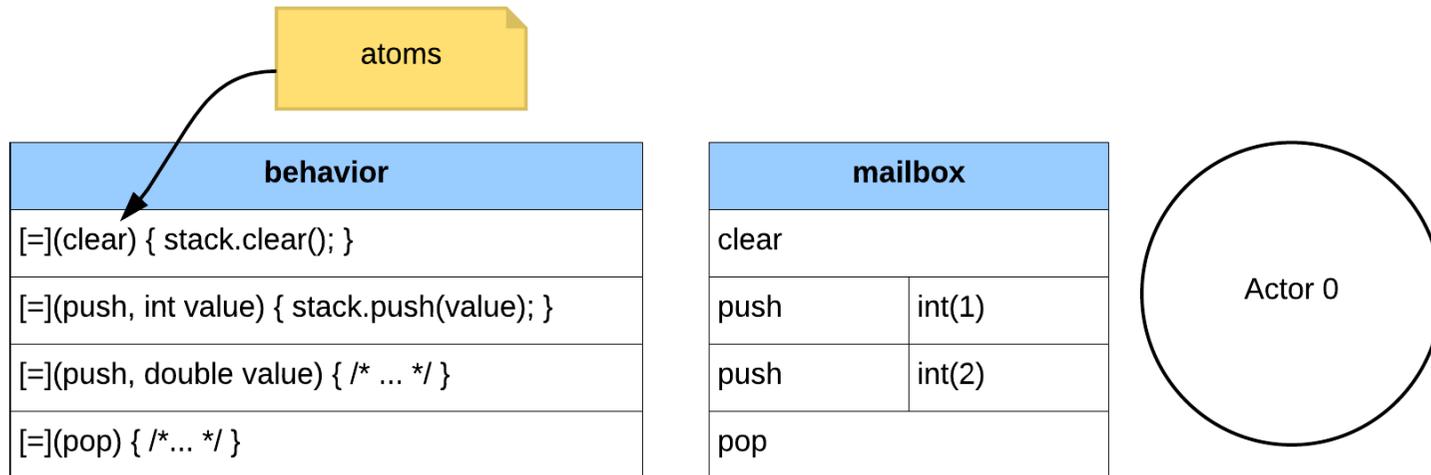
Example

behavior
[=](clear) { stack.clear(); }
[=](push, int value) { stack.push(value); }
[=](push, double value) { /* ... */ }
[=](pop) { /*... */ }

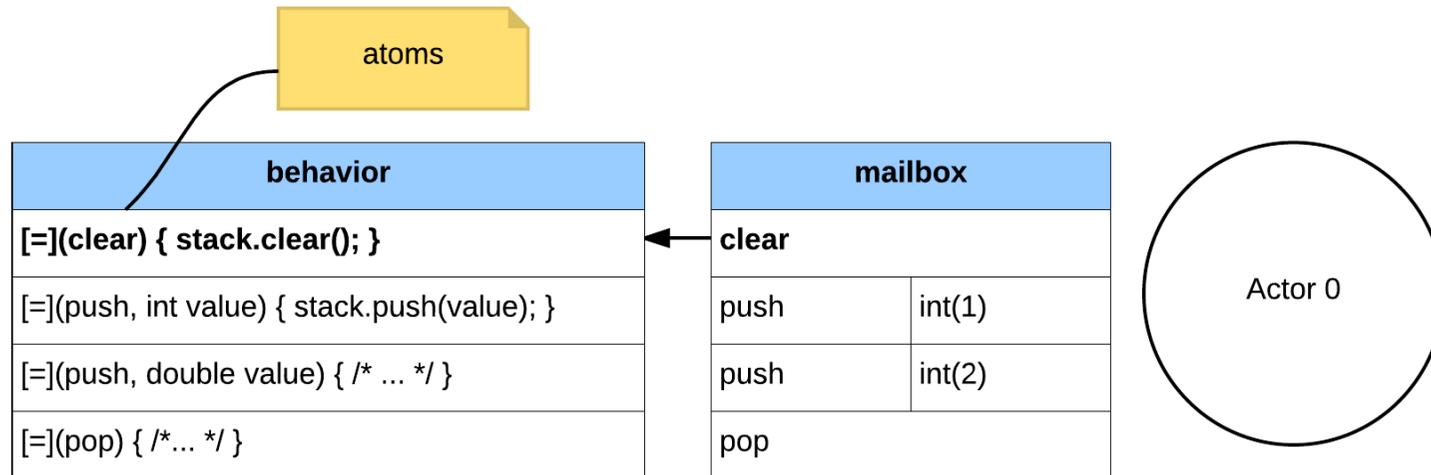
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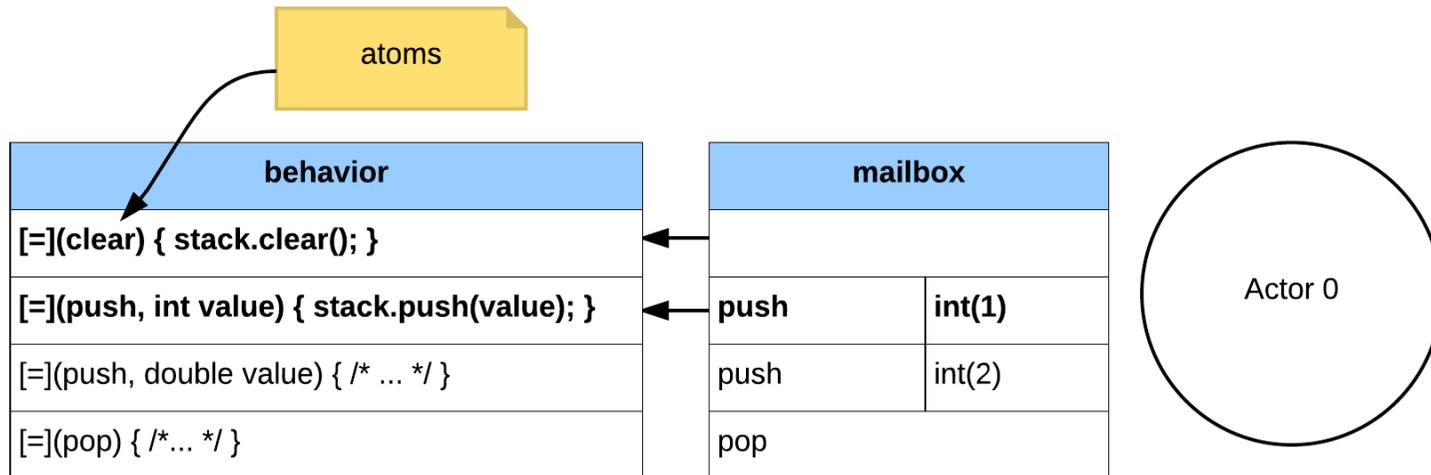
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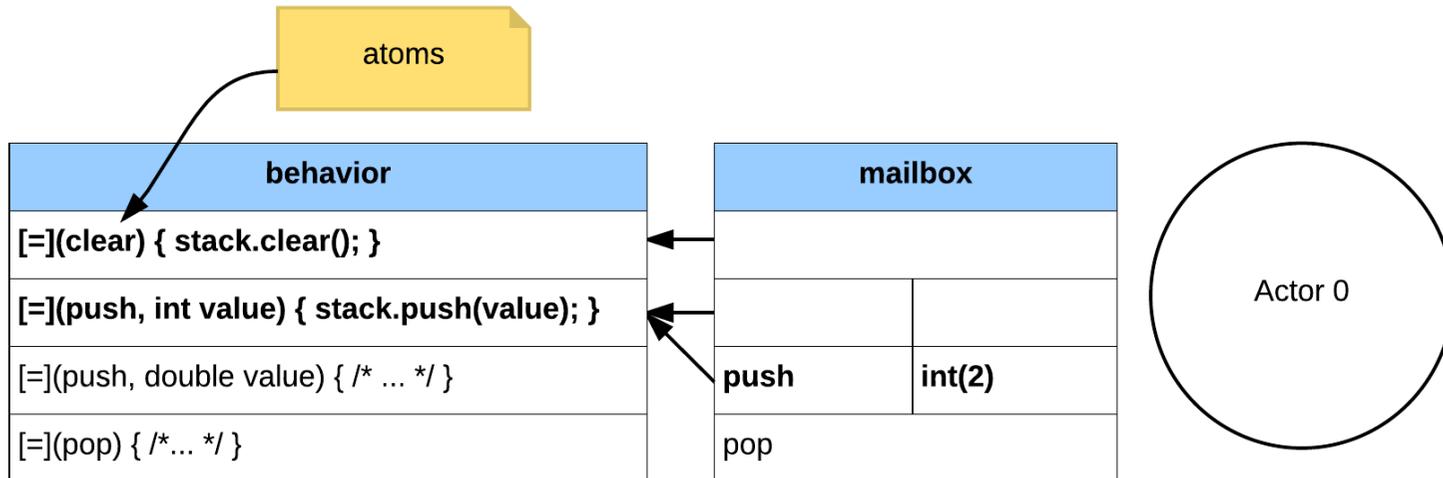
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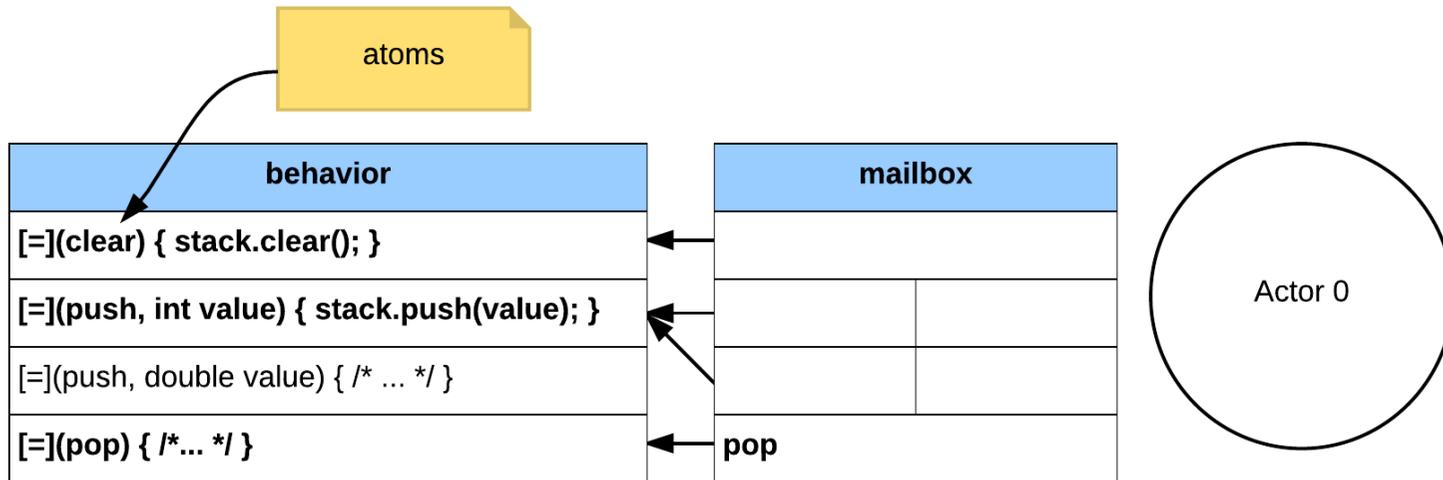
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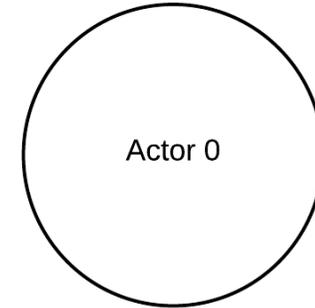
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mailbox

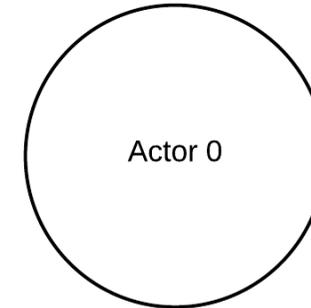


Example

behavior
[=(clear) { stack.clear(); }
[=(push, int value) { stack.push(value); }
[=(push, double value) { /* ... */ }
[=(pop) { /*... */ become(stack_full_behavior) }

stack_full_behavior
[=(clear) { stack.clear(); }
[=(push, int value) { /* send err msg */ }
[=(push, double value) { /*..*/ }
[=(pop) { /*... */ unbecome(); }

mailbox	

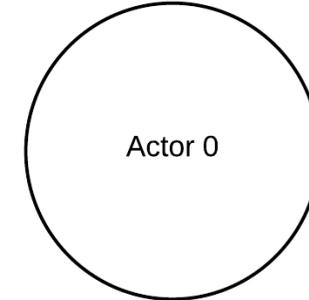


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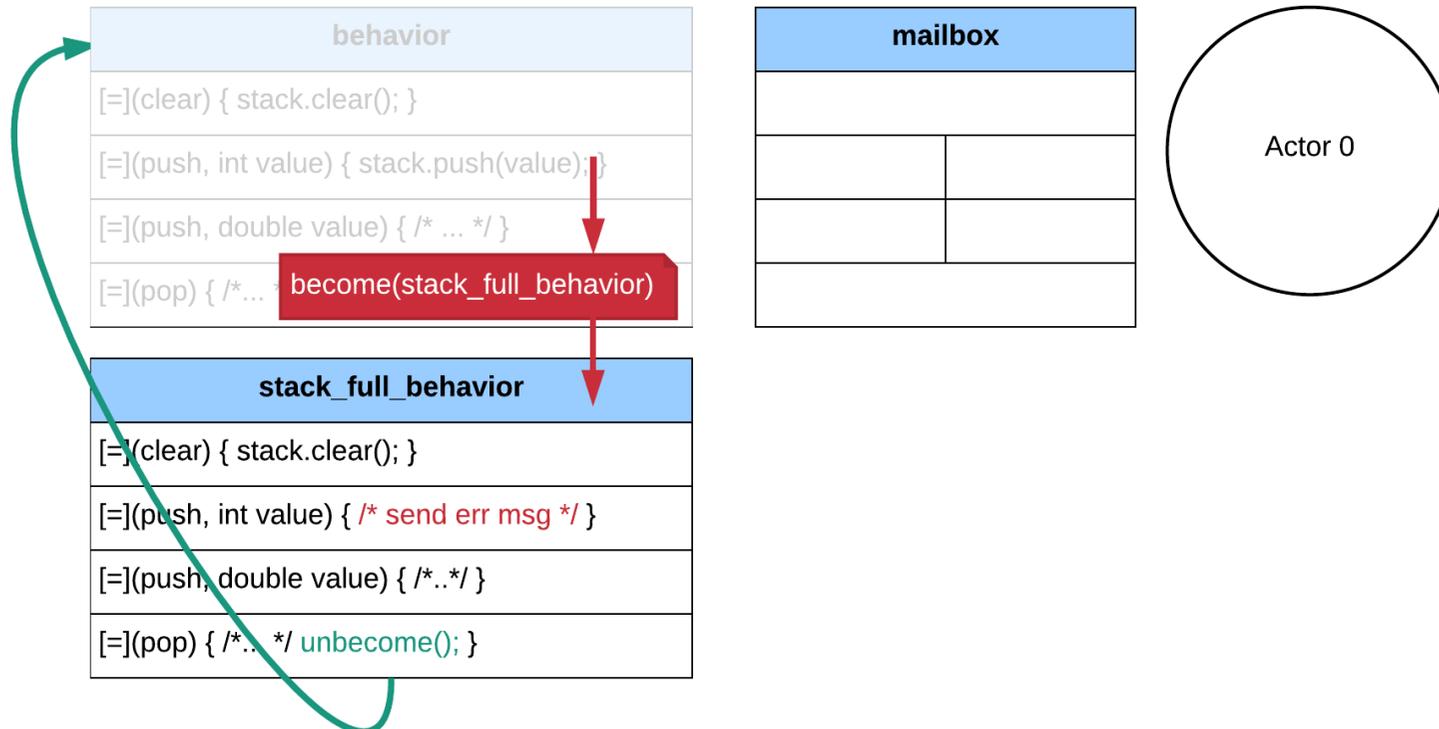
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stack_full_behavior
<code>[=(clear) { stack.clear(); }</code>
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mailbox	



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Use cases

- New paradigm having these actors

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- Combines nicely with OOP IMO
- JSON -> Images* -> Reorder -> Video Stream

DEMO

- Link to the code used/produced in the DEMO:

<https://bitbucket.org/rayburgemeestre/lightning-talk>

- Link to my pet project that uses CAF:

<https://bitbucket.org/rayburgemeestre/starcry>