Week7 Paper Summary———Actor Framework

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This week's paper is the doctoral assertion of Gul A.Agha, a professor in UIUC who focuses on concurrency computation. This paper aims to introduces a general framework in which computation in distributed parallel systems can be exploited. It's a quite long paper, due to the limit of time, I mainly focus on chapter 3.

In chapter 3, Gul examined the structure of computation in the actor paradigm by using an informal but intuitive way. He explained actors and communications and then outlined the constructs which suffice to define a minimal actor language. He also gives some examples of actor programs by using pseudo-code and finally he defined two simple languages based on which the kernel of actors could be easily implemented.

This paper could be considered as a pretty prophetic one which shows the potential of concurrent computation and guides us how to do. Such framework or programming style is a direct extension of Letterbox style which we implemented a month ago. Object interact which each other by sending message, and such message, as Agha showed in his paper, could be various even actors could be included in such message which improve the convenience of actor framework to a large extent. In each object, there is a queue to save the message, once the thread object is running, it will read a message from its own queue and then do the appropriate work according to such message. Java, Android and some other distributed frameworks all benefit from such framework which shows the great power of Actor framework.