AKKA

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Actor

- An actor is an entity which communicates to other actor by message passing.

- Actor is an object that encapsulates state and behavior.

- You can create actor by extending Actor trait and implementing it's receive method.

- Receive method is called each time a message is received by the actor.

- The receive method does pattern matching on the received message and decide what to do.

Actor System

- The ActorSystem is a root actor in actors structure.

- An ActorSystem is a hierarchical group of actors which share common configuration, e.g. dispatchers, deployments, remote capabilities and addresses.

- It is also the entry point for creating or looking up actors. It is an abstract class which extends to ActorRefFactory trait.

- ActorSystem provides an actorOf() method which is used to create actor instance.

Props

- Props is a configuration class which is used to specify options while creating an actor.

- You can create actor by passing a Props instance into the actorOf() factory method which is available in ActorSystem and ActorContext.

- The actorOf() method returns an instance of ActorRef.

tell Method

- It is used to send a message asynchronously.

- It does not wait and block thread for a message. It works on "fire-forget" approach.

- You can also use ! (bang) exclamation mark to send message. This is the preferred way of sending messages. It gives the best concurrency and scalability characteristics.

- If this method is invoked from within an Actor, the sending actor reference will be implicitly passed along with the message.

- If this method is invoked from an instance that is not an Actor, the sender will be **deadLetters** actor reference by default.

ask Method

- In akka, ask is a pattern and involves Actors as well as Futures.

- Ask is used to sends a message asynchronously and it returns a Future which represents a possible reply.

- If the actor does not reply and complete the future, it will expire after the timeout period. After timeout period, it throws an TimeoutException.

- You can use either ? (question mark) or ask() to send message.

- You should always prefer tell method for performance and ask method, if you want response.