



# CORDA CHEAT SHEET

## Useful links:

Documentation: docs.corda.net  
Slack: slack.corda.net  
Stack Overflow: stackoverflow.com/questions/tagged/corda

## RUNNING CORDA

a. Set up your dev environment
https://docs.corda.net/getting-set-up.html
b. Clone the template app
git clone https://github.com/corda/cordapp-template-kotlin
c. Check out the latest milestone (e.g. M14)
cd cordapp-template-kotlin && git checkout release-M14
d. Deploy the nodes
./gradlew clean deployNodes
e. Run the nodes
Unix: sh build/nodes/runnodes
Windows: call build/nodes/runnodes.bat

## STATES

<b>ContractState</b>
The base class for on-ledger states
<b>.contract</b>
The Contract governing this state's evolution
<b>.participants</b>
The parties able to consume this state
<b>LinearState (extends ContractState)</b>
State representing a 'shared fact' evolving over time
<b>.linearId</b>
An ID shared by all evolutions of the 'shared fact'
<b>.isRelevant(Set&lt;PublicKey&gt;)</b>
Should our vault track this state?
<b>OwnableState (extends ContractState)</b>
State representing fungible assets (cash, oil...)
<b>.owner</b>
The state's current owner

## CONTRACTS

<b>Contract</b>
Establishes which transactions are valid for a given state
<b>.verify(LedgerTransaction)</b>
Throws an exception if the transaction is invalid
<b>.legalContractReference</b>
A hash of the contract's legal prose

## TRANSACTIONS

<b>TransactionBuilder</b>
A mutable container for building a general transaction
<b>.withItems(vararg Any)</b>
Adds items (states, commands...) to the builder
<b>ServiceHub.signInitialTransaction(TransactionBuilder)</b>
Converts the builder to a signed transaction

## TRANSACTIONS (CONT.)

<b>SignedTransaction</b>
A wire transaction, plus associated digital signatures
<b>.verifyRequiredSignatures()</b>
Verify all the transaction's required signatures
<b>.verifySignaturesExcept(vararg List&lt;PublicKey&gt;)</b>
Verify all the transaction's required signatures except those listed
<b>.verify()</b>
Verify the transaction
<b>.toLedgerTransaction(ServiceHub)</b>
Resolve transaction into a LedgerTransaction for extra verification
<b>ServiceHub.addSignature(SignedTransaction)</b>
Add a digital signature to the transaction

## FLOWS

<b>FlowLogic</b>
The actions executed by one side of a flow
<b>.send(Party, Any)/receive(Party)/sendAndReceive(Party, Any)</b>
Sends data to/receives data from the specified counterparty
<b>.subFlow(FlowLogic&lt;R&gt;, Boolean)</b>
Invokes a sub-flow that may return a result
<b>.serviceHub</b>
Provides access to the node's services

## FLOW ANNOTATIONS

<b>@InitiatingFlow</b>
A flow that is started directly
<b>@InitiatedBy(KClass)</b>
A flow that is only started by a message from an InitiatingFlow
<b>@StartableByRPC</b>
Allows the flow to be started via RPC by the node's owner

## SERVICE HUB

<b>.networkMapCache</b>
Provides info on other nodes on the network (e.g. notaries...)
<b>.vaultService</b>
Stores the node's current and historic states
<b>.storageService</b>
Stores additional info such as transactions and attachments
<b>.keyManagementService</b>
Manages the node's digital signing keys
<b>.myInfo</b>
Other information about the node
<b>.clock</b>
Provides access to the node's internal time and date
<b>.schedulerService</b>

## PROVIDING AN API

a. Subclass CordaPluginRegistry
class MyWebPlugin : WebServerPluginRegistry() {...}
b. Override webApis
override val webApis = listOf(Function(::MyApi))
c. Register the fully qualified class name of the plugin
...under src/main/resources/META-INF/services/WebPluginRegistry