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LOCAL INSTANCE Integers
LOCAL INSTANCE Sequences
LOCAL INSTANCE utils
CONSTANTS BcNodes, BftNodes, CrossLink2Nodes
CONSTANTS Sigma, L
VARIABLES bc_chains, bft_chains, crosslink2_chains
The genesis blocks for the chains.
BcGenesisBlock \stackrel{\triangle}{=} [context\_bft \mapsto 0, hash \mapsto 0]
BftGenesisBlock \triangleq [headers\_bc \mapsto \langle \rangle, hash \mapsto 0]
CrossLink2GenesisBlock \stackrel{\triangle}{=} [fin \mapsto \langle BcGenesisBlock \rangle]
The views and tips for the chains.
BcView(i) \stackrel{\triangle}{=} bc\_chains[i]
BcTip(i) \stackrel{\Delta}{=} BcView(i)[Len(BcView(i))]
BftView(i) \triangleq bft\_chains[i]
BftTip(i) \stackrel{\Delta}{=} BftView(i)[Len(BftView(i))]
BcTips \triangleq \{BcTip(i) : i \in 1 .. BcNodes\}
BftTips \triangleq \{BftTip(i) : i \in 1 ... BftNodes\}
The best chain selection functions.
\begin{array}{ll} ChooseBestBcTip \ \stackrel{\triangle}{=} \ Max(\{t.hash: t \in BcTips\}) \\ ChooseBestBftTip \ \stackrel{\triangle}{=} \ Max(\{t.hash: t \in BftTips\}) \end{array}
ChooseContextBft \stackrel{\Delta}{=} Max(\{t.hash : t \in BcTips\})
ChooseBestBcChain \triangleq
    CHOOSE i \in 1 ... BcNodes : Len(bc\_chains[i]) = Max(\{Len(bc\_chains[j]) : j \in 1 ... BcNodes\})
ChooseBestBftChain \triangleq
    CHOOSE i \in 1 ... BftNodes : Len(bft\_chains[i]) = Max(\{Len(bft\_chains[j]) : j \in 1 ... BftNodes\})
ChooseBcView \triangleq BcView(CHOOSE i \in 1..BcNodes : TRUE)
ChooseBestCrosslinkChain \triangleq
    CHOOSE i \in 1.. CrossLink2Nodes : Len(crosslink2\_chains[i]) =
         Max(\{Len(crosslink2\_chains[j]): j \in 1 .. CrossLink2Nodes\})
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- MODULE definitions