

Solution to Problem 7

Task. Show, step by step, how the following grammar describing binary integers will generate the integer +110. In this grammar, I stands for integer, U for unsigned integer, and D for digit. The rules are: $I \rightarrow +U$, $I \rightarrow -U$, $I \rightarrow U$, $U \rightarrow DU$, $U \rightarrow D$, $D \rightarrow 0$, and $D \rightarrow 1$.

Solution. The derivation of this string takes the following form:

