A nonrepetitive coloring of a path is a coloring of its vertices such that the sequence of colors along the path does not contain two identical, consecutive blocks. The remarkable construction of Thue asserts that 3 colors are enough to color nonrepetitively paths of any size. A nonrepetitive coloring of a graph is a coloring of its vertices such that all simple paths are nonrepetitively colored. Alon et al. (2002) proved that every graph $G$ with maximum degree at most $\Delta$ is $O(\Delta^2)$-nonrepetitively colorable. Assume that each vertex $v$ of a graph $G$ has assigned a set (list) of colors $L_v$. A coloring is chosen from $\{L_v\}_{v \in V(G)}$ if the color of each $v$ belongs to $L_v$. We say that $G$ is $k$-nonrepetitively choosable if for any such assignment of lists of size $k$ there is a nonrepetitive coloring of $G$ chosen from these lists. Recently, we gave a very simple counting argument that all paths are 4-nonrepetitively choosable. This cannot be extended for all trees as Ossona de Mendez and Zhu (2011+) proved that for any $k$ there is a tree $T$ which is not $k$-nonrepetitively choosable. On the other hand, the Thue’s construction can be easily adopted to show that 4 colors suffice to color nonrepetitively any tree. This indicates the huge difference between the nonrepetitive coloring and the list-setting. In this talk, I will give some insights into the argument that for all $\varepsilon > 0$ there is a constant $c$ such that every tree $T$ with maximum degree at most $\Delta$ is $c \cdot \Delta^{1+\varepsilon}$-nonrepetitively choosable. We will also discuss the possible directions of the future research. Our techniques are inspired by a new algorithmic proof of the Lovász Local Lemma due to Moser and Tardos.