

# Braid Spirit of Young Tableaux

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The plactic monoid was discovered by Knuth, who used an operation given by Schensted in his study of the longest increasing subsequence of a permutation. It was systematically studied by Lascoux and Schützenberger.

The elements of the plactic monoid can be written in the canonical form, and in this form they can be identified with some type of the Young tableaux. Because of its strong relations with Young tableaux, the plactic monoid became a classical tool in several areas of representation theory and algebraic combinatorics.

The plactic monoid was given by two kind of relations. We use the Schensted column algorithm to define two binary operations. Then we shall observe very interesting connections between these operations (they look like skew-lattice operations but are non associative). The connection between these operations are in a spirit of braid theory; we can interpret these operations as “over-crossing” and “under-crossing”.

## References

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