

An online algorithm must make decisions immediately and irrevocably based only on a part of the input without any knowledge of the future part of the input. We introduce the competitive analysis of online algorithms, a standard worst-case analysis, and present main results of this analysis on the problem of online Bin Packing and on some of its variants. In Bin Packing, a sequence of items of size up to 1 arrives to be packed into the minimal number of unit capacity bins. Mainly, we focus on Colored Bin Packing in which items have also a color and we cannot pack two items of the same color adjacently in a bin. For Colored Bin Packing, we improve some previous results on the problem with two colors and present the first results for arbitrarily many colors. Most notably, in the important case when all items have size zero, we give an optimal 1.5-competitive algorithm. For items of arbitrary size we present a lower bound of 2.5 and a 3.5-competitive algorithm.