Bilkent University
Department of Mathematics

PROBLEM OF THE MONTH

Term: June 2020

99 dwarves have in total 166 hats. Each of these hats belongs to only one of the dwarves and is painted into one of 99 colors. Several festivals with participation of all 99 dwarves are organized. In each festival each dwarf wears one of its hats. No dwarves wear the same coloured hats in any given festival. For any pair of festivals there is at least one dwarf which wears differently coloured hats in these festivals. Find the maximal possible number of organized festivals.