Optimization of medical tasks

The emergency department of a polyclinic needs to identify doctors available to practice

$P = 15$

emergency procedures. They have been identified

$M = 30$

doctors, who can perform some procedures but at different rates. Determine which doctors to call to obtain global services at the lowest cost.

Study the problem by first applying a greedy technique to get an idea of the set of solutions, then use a simulated annealing (SA) algorithm and an algorithm that uses a population of solutions that **IS NOT GENETIC** to compute a solution. Compare the methods and the solutions obtained.

The candidate studies the problem and compares solutions provided by a greedy approach, a solution population algorithm and a Simulated Annealing algorithm, both in terms of goodness of the solution and calculation time.

Optional: When building solutions with the population algorithm and SIMulated Annealing, compare the case in which you start from a random solution or try to refine the solution provided by the greedy approach.