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Greedy randomized adaptive search procedure

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The **greedy randomized adaptive search procedure** (also known as **GRASP**) is a [metaheuristic](#) algorithm commonly applied to [combinatorial optimization](#) problems. GRASP typically consists of iterations made up from successive constructions of a *greedy randomized* solution and subsequent iterative improvements of it through a [local search](#). The greedy randomized solutions are generated by adding elements to the problem's solution set from a list of elements ranked by a *greedy function* according to the quality of the solution they will achieve. To obtain variability in the candidate set of greedy solutions, well-ranked candidate elements are often placed in a *restricted candidate list* (also known as **RCL**), and chosen at random when building up the solution. This kind of greedy randomized construction method is also known as a **semi-greedy heuristic**, first described in Hart and Shogan (1987).

GRASP was first introduced in Feo and Resende (1989). Survey papers on GRASP include Feo and Resende (1995), Pitsoulis and Resende (2002), and Resende and Ribeiro (2003). An annotated bibliography of GRASP can be found in Festa, G. C Resende (2002).

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See also [\[edit\]](#)

- [Metaheuristic](#)
- [Local search \(optimization\)](#)
- [Constructive cooperative coevolution](#)
- [Cooperative coevolution](#)
- [Simulated annealing](#)
- [Tabu search](#)



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