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procedure SGA( $f : \mathbb{X} \mapsto \mathbb{R}^+$ ,  $ps$ ,  $cr$ ) ▷ for maximization!
   $x_B \leftarrow \emptyset$ ;  $y_B \leftarrow -\infty$ ; ▷ best-so-far solution
  for  $j \in 1 \dots ps$  do ▷ random initial population
    randomly sample  $S_0[j].x$  from  $\mathbb{X}$ ;  $S_0[j].y \leftarrow f(S_0[j].x)$ ;
    if  $S_0[j].y > y_B$  then  $x_B \leftarrow S_0[j].x$ ;  $y_B \leftarrow S_0[j].y$ ;
  for  $i \in 0 \dots \infty$  do ▷ iterate “generations”
    for  $j \in 1 \dots ps$  do ▷ new pop. via mutation and crossover
      if  $\mathfrak{R}_0^1 < cr$  then  $N_i[j].x \leftarrow \text{binary}(S_i[\lfloor \mathfrak{R}_i^{ps} \rfloor].x, S_i[\lfloor \mathfrak{R}_i^{ps} \rfloor].x)$ ;
      else  $N_i[j].x \leftarrow \text{move}(S_i[\lfloor \mathfrak{R}_i^{ps} \rfloor].x)$ ;
       $N_i[j].y \leftarrow f(N_i[j].x)$ ;
      if  $N_i[j].y > y_B$  then  $x_B \leftarrow N_i[j].x$ ;  $y_B \leftarrow N_i[j].y$ ;
   $S_{i+1} \leftarrow \text{Roulette Wheel}$ : select  $ps$  records from  $P_i = S_i \cup N_i$ 
    such that, for each of the  $ps$  slots, the probability
    of  $P_i[j]$  to be chosen is proportional to  $P_i[j].y$ .

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