Algorithmische Graphentheorie
SS 09

The Recursive-Largest-First-Heuristik (Node Coloring)

Procedure: RLF(G(V,E)): integer

{ initialize actual color and uncolored nodes, resp. }
$k := 0$; $U := V$;
while $U \neq \emptyset$ **do**
  $k := k + 1$;
  { color a stable set of nodes with actual color k }
  $\Gamma := \emptyset$ { initialize set of uncolored neighbors of the actual color class }
  repeat
    $U_{max} := \{u \in U : d(u, \Gamma) = \max\{d(x, \Gamma) : x \in U\}\}$;
    Choose node u s.t. $d(u, U) = \min\{d(x, U) : x \in U_{max}\}$;
    $c[u] := k$;
    $\Gamma := \Gamma \cup (\Gamma(u) \cap U)$;
    $U := U \setminus (\{u\} \cup \Gamma(u))$;
  until $U \neq \emptyset$
  $U := \Gamma$;
end while
$RLF := k$;
Output RLF;