Graph coloring algorithm:

$W \leftarrow vertices(G)$
while $W \neq \emptyset$ **do**
    pick a node u from W with the highest saturation,
        breaking ties randomly
    find the lowest color c that is not in $\{\text{color}[v] \ : \ v \in \text{adjacent}(v)\}$
    $\text{color}[u] \leftarrow c$
    $W \leftarrow W - \{u\}$

$\text{saturation}(u) = \{c \mid \exists v.v \in \text{adjacent}(u) \text{ and } \text{color}(v) = c\}$
adjacent(u) is the set of nodes adjacent to u.