Terminology Backtracking and Branch Bound

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once a state space tree has been conceived of for any problem.

1) this problem can be solved by systematically generating the problem states.
2) determining which of these are solution states
3) and finally determining which solution states are answer states.

There are two fundamentally different ways to generate the problem states.
- Both of these begin with the root node itself.

Live Node: A node which has been generated and all of whose children have not yet been generated is called live node.

Dead Node: Its a node is generated node which is not to be expanded further or all of whose children have been generated.

E-node (node being expanded)
The live node whose children are currently being generated is called E-node.

In both methods of generating problem states, we have a list of live nodes

In the first of these two methods as soon as a new child C of the current E-node, R is generated this child R will become the new E-node

That actually corresponds to depth first generation of the problem states.

In the second state generation method, the E-node remains until it is dead.

In both methods, bounding functions are used to kill live nodes without generating all their children. This is a time saver.

This is done carefully enough to
that at the conclusion of
the process at least one answer
node is always generated or
all answer nodes are generated.

Backtracking:

Depth first node generation
with bounding functions is called
backtracking.

state generation methods in
which E-node remains
the E-node until it is
dead leads to
Branch and Bound
methods.

Source
Text Book
Fundamentals of computer Algorithms
By Ellis Horowitz
Sartaj Sahni
Sanguthevar Rajasekaran 2nd ed

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Thanks Courtesy