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Chapters and Topics

CHAPTER 23 (DAY 4 After noon)

BACKTRACING
BACKTRACKING (Reading)
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CHAPTER – 23

BACKTRACKING

INDTRODUCTION

Some of the usefulness of recursion is both as a problem-solving tool and a programming method. It will be interesting to see how recursion can be fruitfully applied to variety of problems.

Computerized solutions and different algorithms are applied and tested whether they can withstand real life situations to make life easier. Sometimes the solutions are extended to the game boards. Always there will be a quest to attain solutions to very interesting problems.

Backtracking algorithms attempt to complete a search for a possible solution to a problem by constructing partial solutions, always ensuring that the partial solutions remain consistent with the requirements of the problem. The algorithm then attempts to extend a partial solution toward completion, but when an inconsistency with the requirements of the problem occurs, the algorithm backs up (**backtracks**) by removing the most recently constructed part of the solution and trying another possibility. When a dead end is reached, the solution must **backtrack** by going back to the most recent choice made and trying another possibility. When it is not possible to move forward, it requires to step back all the way to the first solution and retrace all the steps until it is possible to move forward in seeking a final solution.

Backtracking proves useful in situations where many possibilities may first appear, but few survive further tests. Many times **backtracking** may produce fruitful results. But **backtracking** methods always will not lead to successful solutions. **Backtracking** has to be selectively applied where moving back and forwarding are easily possible.