Greedy Strategy

- A greedy algorithm always makes the choice that looks best at the moment.
- That is, it makes a locally optimal choice in the hope that this choice will lead to a globally optimal solution.
- Greedy algorithms do not always yield optimal solutions, but for many problems they do.

- The greedy method suggests that one can devise an algorithm which works in stages, considering one input at a time.
- At each stage, a decision is made regarding whether or not a particular input is in an optimal solution.
- If the inclusion of the next input into the partially constructed optimal solution will result in an infeasible solution, then its input is not added to the partial solution.
- The selection procedure itself is based on some optimization measure.

Greedy Method Control Abstraction

```
Procedure Greedy (A,n) //A (1:n) contains the n inputs //
Solution= ∅ // Initialize the solution to empty //
for i=1 to n do
    x= SELECT (A)
    if FEASIBLE (solution, x) then
        solution= UNION (solution, x)
    endif
repeat
```

return (solution)

end

- The function SELECT selects an input from A, removes it & assigns the value to x.
- FEASIBLE is a boolean valued function which determines if x can be included into the solution vector.
- UNION actually combines x with solution.