Module-3

Divide & Conquer

Divi- To solve any problem we have multiple approaches. They are as follows

1. Divide & Conquer
2. Greedy Algorithms
3. Dynamic Algorithms
4. Branch & bound Algorithms

& many more

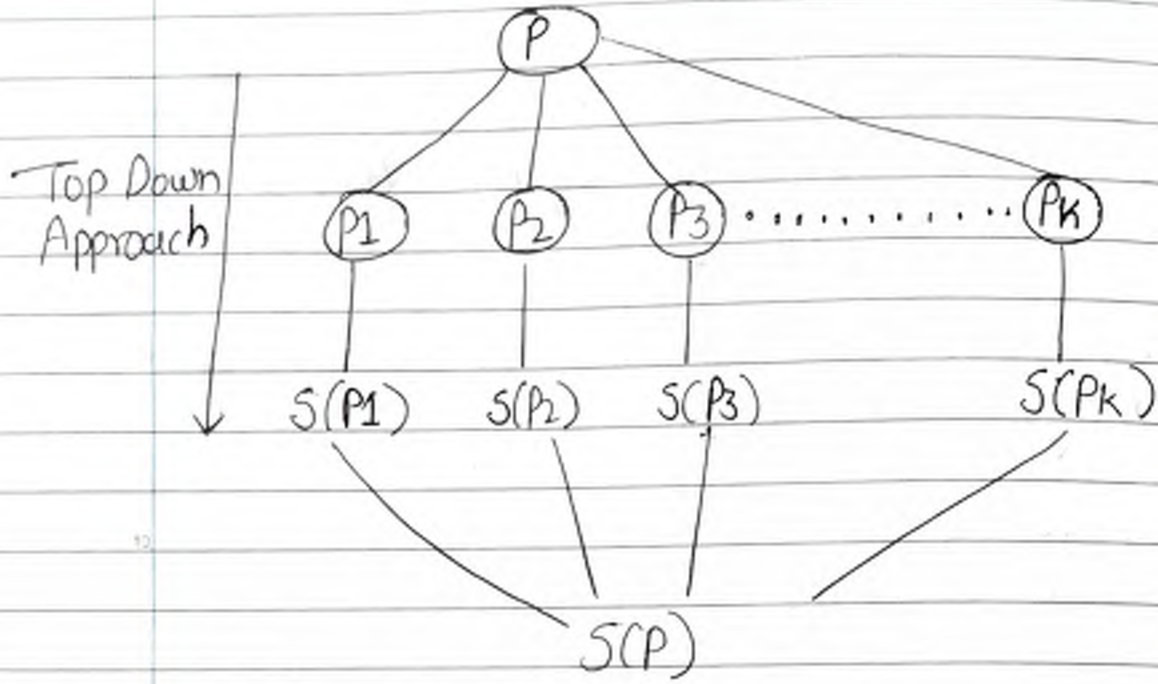
Divide & Conquer :-

It is top down approach for designing algorithm consist of following phases:-

1) Divide :- Divide the problem into subproblems that is similar to the original problem & smaller in size.

2) Conquer :- Solve the subproblem recursively.

3) Combine :- combine these solution of all subproblems to create solution of original problem.




```
Algorithm DandC(P)
{
    if problem P is smaller then
        return S(P)
    else
    {
        divide P into smaller problems
            P1, P2, P3... Pk where k ≥ 1

        apply DandC to each subproblem recursively

        Return combin(DandC(P1), DandC(P2)... DandC(Pk))
    }
}
```