Week 4:

- **Dynamic programming** is a technique that breaks the problems into sub-problems, and saves the result for future purposes so that we do not need to compute the result again. The subproblems are optimized to optimize the overall solution is known as optimal substructure property. The main use of dynamic programming is to solve optimization problems. Here, optimization problems mean that when we are trying to find out the minimum or the maximum solution of a problem. The dynamic programming guarantees to find the optimal solution of a problem if the solution exists.
- The definition of dynamic programming says that it is a technique for solving a complex problem by first breaking into a collection of simpler subproblems, solving each subproblem just once, and then storing their solutions to avoid repetitive computations.
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- **.Fibinocci series**
- The Fibonacci sequence is a set of integers (the Fibonacci numbers) that starts with a zero, followed by a one, then by another one, and then by a series of steadily increasing numbers. The sequence follows the rule that each number is equal to the sum of the preceding two numbers.

```
def Iterative_fib(n):
  fib = [0, 1]
  for i in range(2, n+1):
    f.append(fib[i-1] + fib[i-2])
  return fib[n]

print(Iterative_fib(10))
```