Mathematics of Computer Science. - M.I.T. opencourseware

Abstract:
the class taught how to make proof(inductive hypothesis) clean and elegant. Give the 4-5 theorem for instance. Last theorem was about strong induction that little differ than before inductive hypothesis one.

For the English:
new term I learned = conjecture, adjacent, invariant, trick, preceeding, order

expression = for instance, be preserved, fulfilled ones end of the bargain

Lec 3. STRONG INDUCTION:

- 7 characteristic of good proof
correct, complete, clear, brief, elegant(clever and mathematical beauty), well organized(same lemma, subroutine), in order(top down)
=> fermat last theorem(conjecture) is not good technique of proof

- Legal move in 3 by 3 puzzel with 8 piece
natural order <=> relative order
lemma 1 = a row move does not change the order of the items
lemma 2 = a column move changes the relative order of precisely 2 preceeding it or 2 after it when moves up - down
lemma 3 = during the move the number of inversion is only increased-decreased by '2'
corlollary = during a move the parity(even or odd) of number inversions does not change
lemma 4 = in every state reachable from puzzel, the parity of number inversion is odd

-strong induction
expressed with an axiom
let $P(n)$ be only predicate. if $P(0)$ is true for all $(P(0)\&P(1)\&...\&P(n))$ is true => $P(n+1)$ is true then for all $P(n)$ is ture

unstacking game 8 blocks of wood and separate them part and multiple them and add up all point // it end up to 28 and every strategy get 28

theorem = all strategies for the n-block game produce same score - $S(n)$
make formula of $S(n) = n(n-1)/2$
Score = $K(n+1-k) + P(k) + P(n+1-k)$
is not recursive?