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# Problem 5.1
# Test 1

# Input. N boxes with h,w,l
ub = [[1,2,3]
    ,[5,6,7]
    ,[1,3,4]
    ,[3,4,5]
    ,[4,5,6]]

# Output from the algorithm: maximum number of feasible boxes
# print memo[n-1]
# > 4

#------------- Code in python -------------
# Give dimensions of 5 unsorted boxes
n = len(ub)
# Algorithm: MaxBoxes
# 1. Sorted boxes according to h
sb = sorted(ub, key = lambda box: box[0])
# 2. Initialize memo table
memo = [0]*5
# 3. Set memo[0] = 1
memo[0] = 1
# 4. Recurrence
i = 1 # start from 2nd box in sorted boxes
for b in sb[1:n]:
    if sb[i-1][0] < sb[i][0] and sb[i-1][1] < sb[i][1] and sb[i-1][2] < sb[i
        memo[i] = memo[i-1] + 1
    else:
        memo[i] = memo[i-1]
    i = i + 1
# output final max number of boxes
print memo[n-1]
#------------- End of Code -------------

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