

HW8: Dynamic Programming

A. [60 pnts] Problems from the text book (15 points per question):

6.1,
6.4,
6.17,
6.19;

B. [40 pnts] Consider the “Weighted Interval Scheduling” problem discussed in the class with the following requests

R={ r1,r2,r3,r4,r5,r6} where

| | Start time | Finish time | Value |
|-----|------------|-------------|-------|
| r1: | (1 | 3 | 2) |
| r2: | (2 | 5 | 4) |
| r3: | (4 | 5 | 3) |
| r4: | (2 | 7 | 7) |
| r5: | (6 | 8 | 2) |
| r6: | (6 | 9 | 1) |

1. [20 pnts] Implement an iterative DP Algorithm to find the subset of requests that has the total maximum value. (Hint: us an array M to store the values as described in the class)

2. [20 pnts] implement an algorithm and print the list of intervals in the optimal solution above by using the array M without maintaining another data structure.