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CS 477

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## HW6

1.

$$a. \quad d^* = \max(c[i, 1], c[i, 2], \dots, c[i, i])$$

$$c[i, j] = \text{if } j \neq 1, c[i - 1, j - 1] + \min(s_j, x_i)$$

$$\text{if } j = 1, \max(c[i - 1, 1], \dots, c[i - 1, i - 1])$$

$c[i, j]$  is the amount of processed data.  $i$  is the day.  $j$  is the number of days since the last restart.  $x_n$  is the amount of available data for that day.  $s_n$  is the processing capability for  $n$  days past the last restart.  $d^*$  is the amount of data processed.

This solution works by maximizing the data processed by calculating the data processed per day and last restart, and maximizing it.

b. See `schedule.cpp`.

Table:

0 0 8 9 15

0 8 1 15 16

0 4 9 5 19

0 2 5 11 7

0 1 3 6 12

c. See `schedule_1.cpp`.

Previous Index Table:

0 0 1 2 1

0 0 0 0 0

0 1 1 1 1

0 2 2 2 2

0 3 3 3 3

Solution:

$$8 + 0 + 7 + 4 = 19$$

- d. See `schedule_2.cpp`

Reboot on day(s): 2