

# Lecture 31

CSE 331

Apr 16, 2021

# Scheduling to min idle cycles

$n$  jobs,  $i^{\text{th}}$  job takes  $w_i$  cycles

You have  $W$  cycles on the cloud



What is the maximum number of cycles you can schedule?

# Subset sum problem

Input:  $n$  integers  $w_1, w_2, \dots, w_n$

bound  $W$

Output: subset  $S$  of  $[n]$  such that

(1) sum of  $w_i$  for all  $i$  in  $S$  is at most  $W$

(2)  $w(S)$  is maximized

# Today's agenda

Dynamic Program for Subset Sum problem