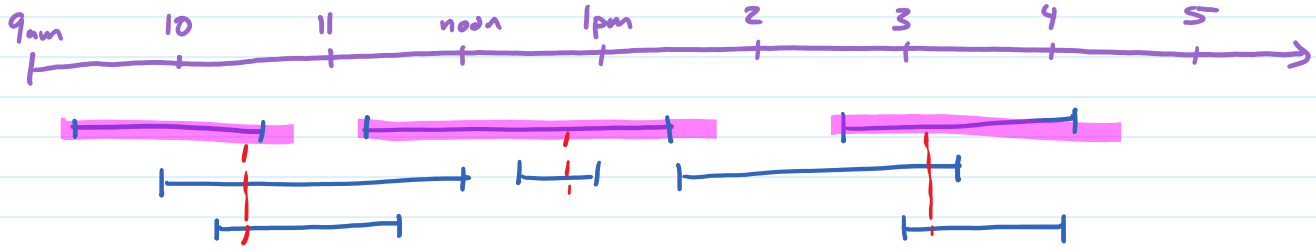
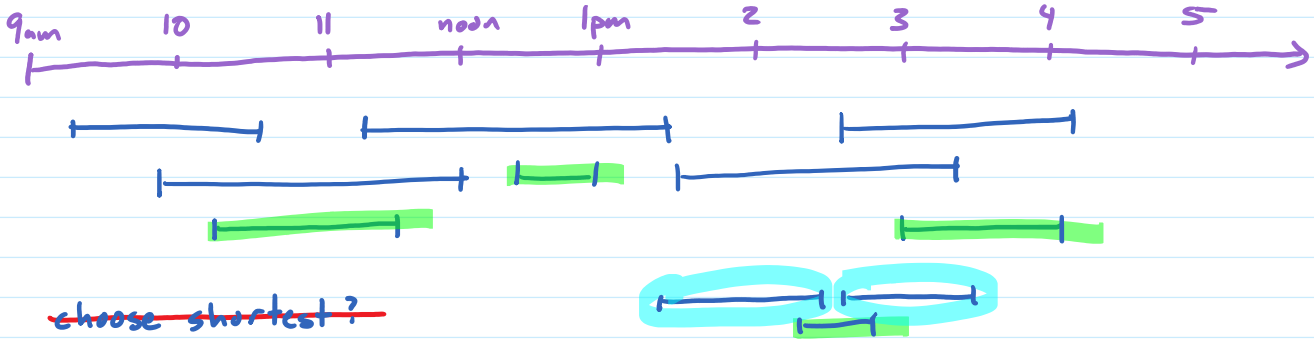
Interval Scheduling : find largest set of non-overlapping intervals given start/endpoints

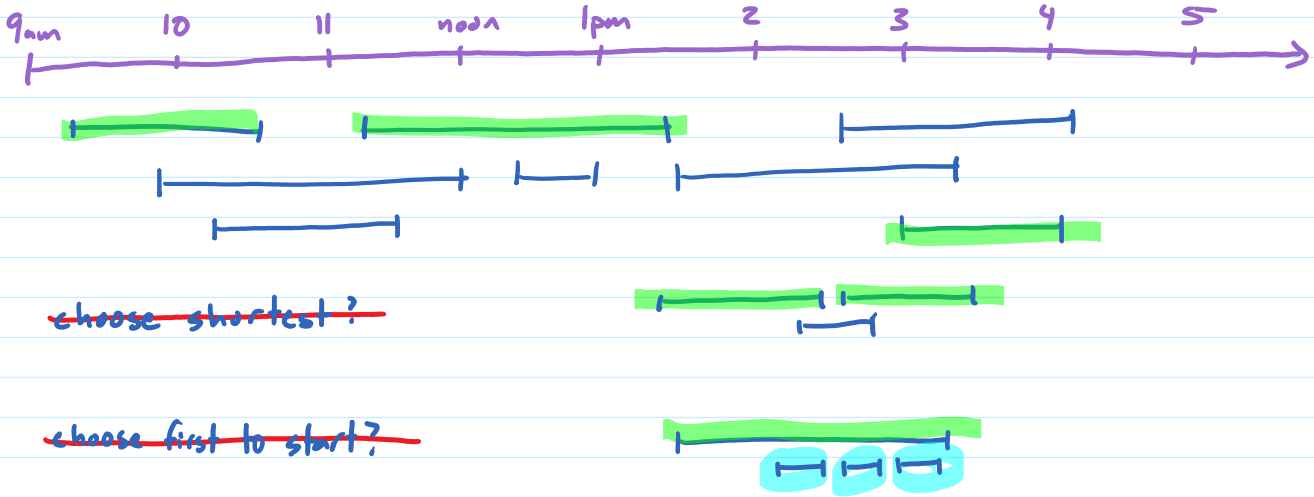


Interval Scheduling : find largest set of non-overlapping intervals given start/endpoints



Greedy : ~~choose shortest?~~

Interval Scheduling : find largest set of non-overlapping intervals given start/endpoints

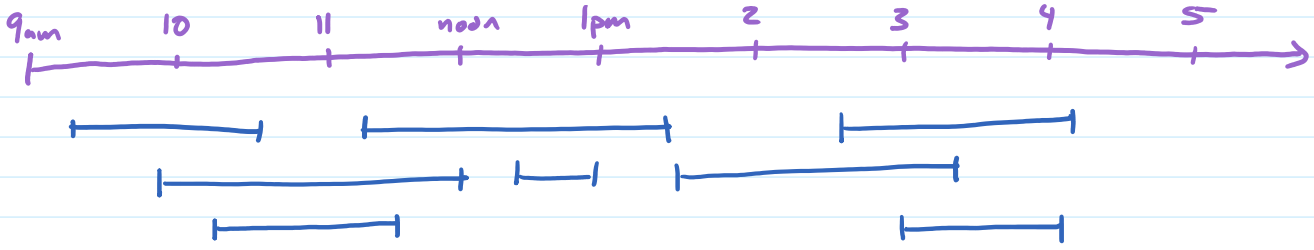


Greedy :

~~choose shortest?~~

~~choose first to start?~~

Interval Scheduling : find largest set of non-overlapping intervals given start/endpoints

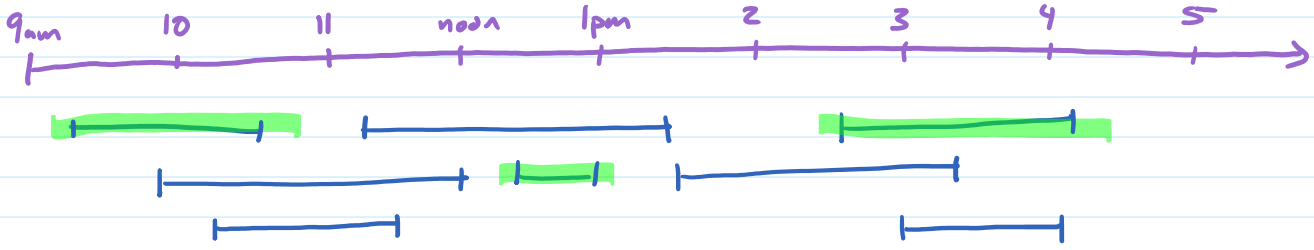


Greedy :

~~choose shortest?~~

~~choose first to start?~~
~~choose last to finish?~~

Interval Scheduling : find largest set of non-overlapping intervals given start/endpoints



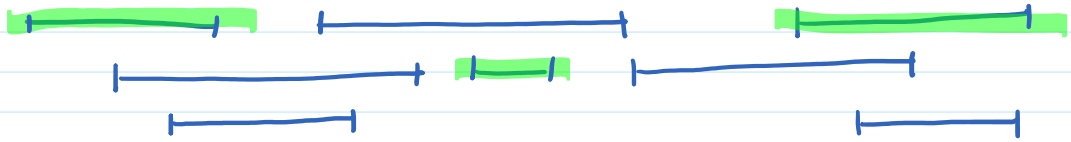
Greedy :

~~choose shortest?~~

~~choose first to start?~~
~~choose last to finish?~~

choose fewest overlaps?

Interval Scheduling : find largest set of non-overlapping intervals given start/endpoints

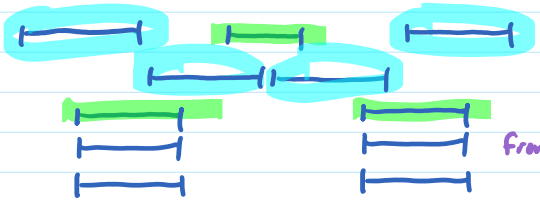


Greedy :

~~choose shortest?~~

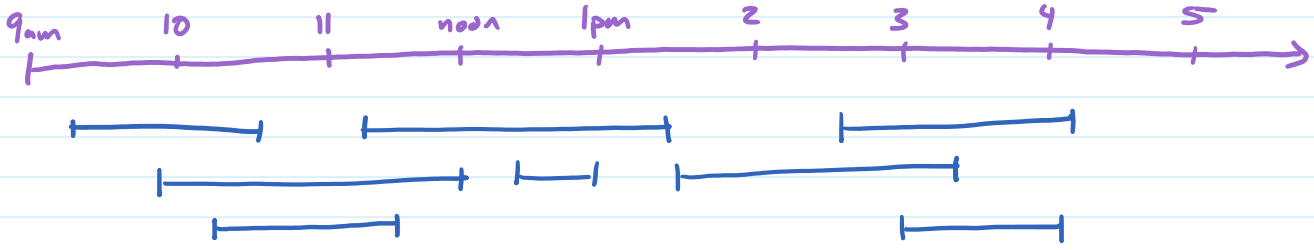
~~choose first to start?~~
~~choose last to finish?~~

~~choose fewest overlaps?~~



From Jyh-haw Yeh, Boise State

Interval Scheduling : find largest set of non-overlapping intervals given start/endpoints

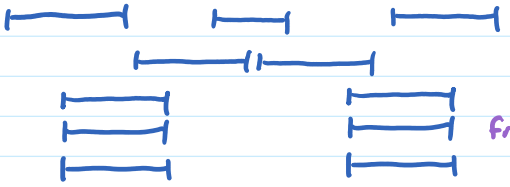


Greedy :

~~choose shortest?~~

~~choose first to start?~~
~~choose last to finish?~~

~~choose fewest overlaps?~~



From Jyh-haw Yeh, Boise State

choose first to finish?

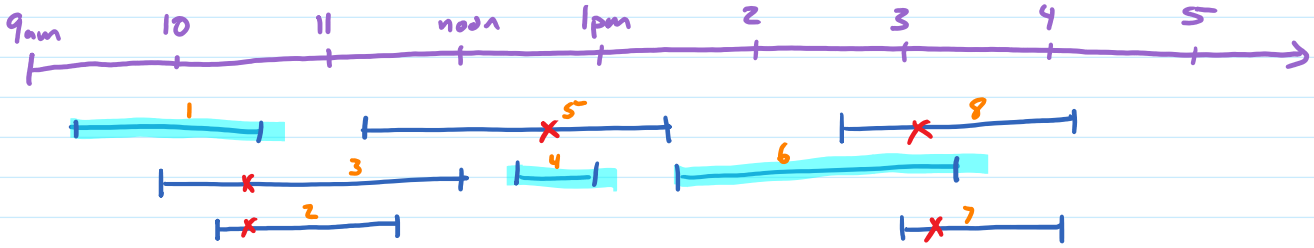
Interval Scheduling : find largest set of non-overlapping intervals given start/endpoints

Interval Scheduling : find largest set of non-overlapping intervals given start/endpoints

PRE: $f[1] \leq f[2] \leq \cdots \leq f[n]$ and $s[1] < f[1], \ldots, s[n] < f[n]$
POST: A is a list of distinct indices of non-overlapping intervals that maximizes len(A)

```
A ← []
k ← 0
R ← {1, ..., n}
while R ≠ ∅
    choose i ∈ R to minimize f[i]
    append i to A
    k ← k + 1
    remove from R the intervals x with s[x] < f[i]
```

Interval Scheduling : find largest set of non-overlapping intervals given start/endpoints



PRE: $f[1] \leq f[2] \leq \cdots \leq f[n]$ and $s[1] < f[1], \ldots, s[n] < f[n]$
POST: A is a list of distinct indices of non-overlapping intervals that maximizes len(A)

```
A ← []
k ← 0
R ← {1, ..., n}
while R ≠ ∅
    choose i ∈ R to minimize f[i]
    append i to A
    k ← k + 1
    remove from R the intervals x with s[x] < f[i]
```

$R = \{1, 2, 3, 4, 5, 6, 7, 8\}$