

Lecture 5 : Binary Search Trees (BSTs), BST Sort

Sriini Devadas

Scheduling and Binary Search Trees

Runway reservation system

- Defn

- How to solve with arrays / lists

Binary Search Trees : operations

Runway reservation system

Airport with a single runway :

Reservations for future landings

Reserve requests for landings : specifies landing time T

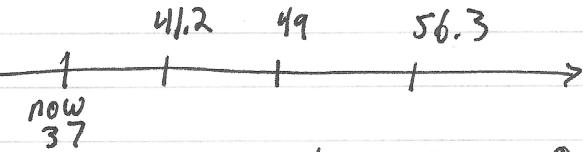
Add t to set R of landing times if no other landings are scheduled within $\frac{t}{k}$ minutes

Remove from set R after plane lands

$\| R \| = n$
 $O(\lg n)$ time

Example

$k=3$



request 53 OK

44 not allowed \Rightarrow too close to 41.2

20 not allowed (past)