

CS 529: Advanced Data Structures & Algorithms

Assignment 1

Nathan Chapman, Hunter L., Andrew Struthers

January 9, 2024

Algorithm for creating a 3-2 B-Tree

Insertion: If node has 3 keys, bump up the middle one and restructure the rest to be children of a binary tree.

Test algorithm

```
 $i \leftarrow 10;$   
if  $i \geq 5$  then  
   $i \leftarrow i - 1;$   
else  
  if  $i \leq 3$  then  
     $i \leftarrow i + 2;$   
  end  
end
```

Discussion on van Emde Boas Trees

Parking lots

Discussion on Skip Lists

Skip lists are great because they're really fast to search. This is because the intrinsic search algorithm skips over a lot of the elements.