Background

CSCI 232

Running Time – Array Implementation

```
public void addStudent(String name, int studentNumber, double gpa) {
   Student newStudent = new Student(name, studentNumber, gpa);
   Student[] tempDatabase = new Student[database.length + 1];
   for (int i = 0; i < database.length; i++) {
       tempDatabase[i] = database[i];
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Big O Notation: Upper bound on asymptotic growth. I.e. Worst case upper bound of a function.

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$$\mathbf{3n^2 + 2n - 156 \in O\left(n^2\right)}$$

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$$\boxed{O(n)}$$

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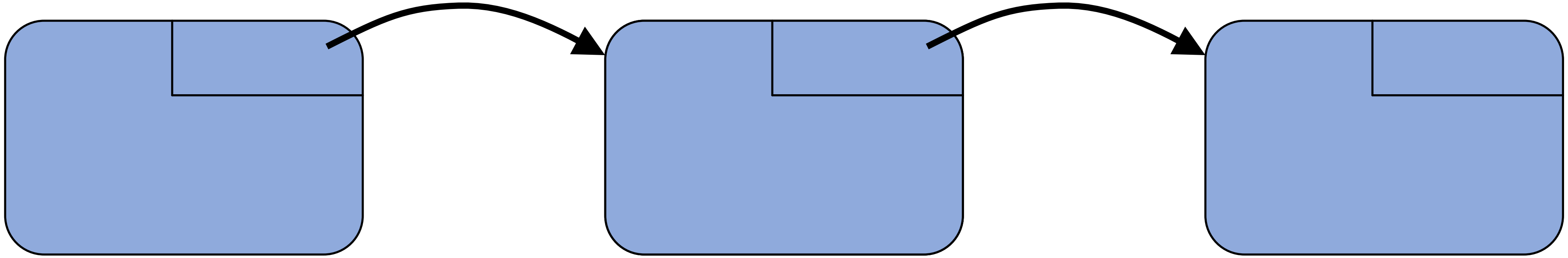
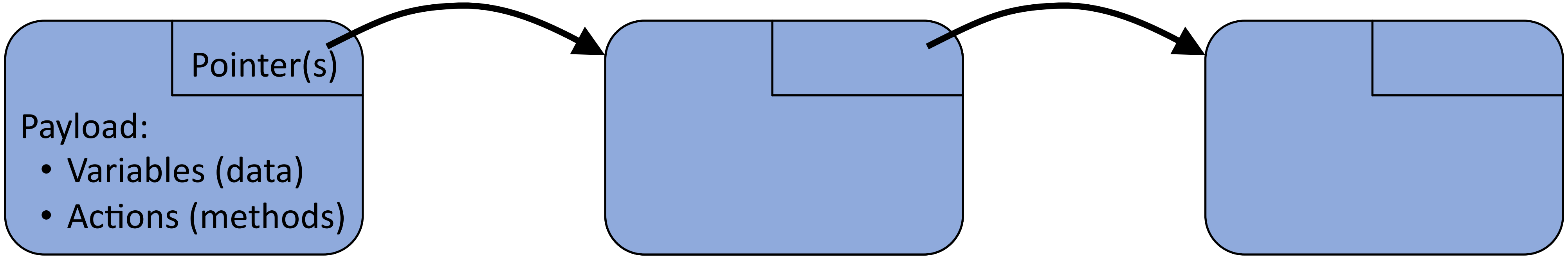
Linked List



Linked List: Linear data structure of ordered objects.

Linked List



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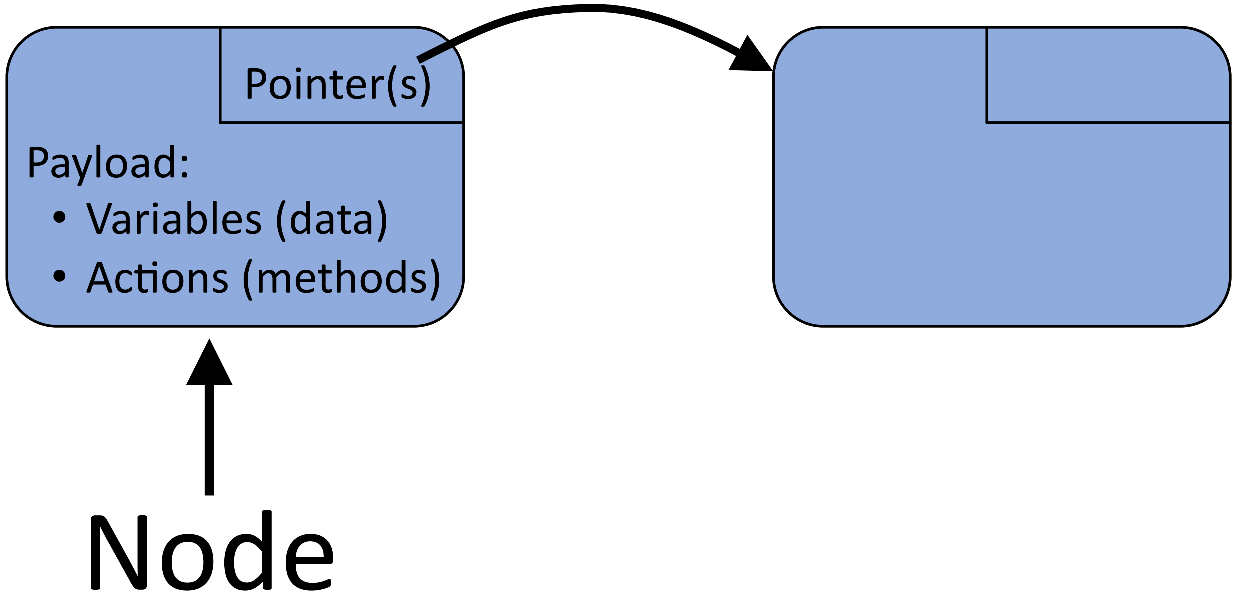
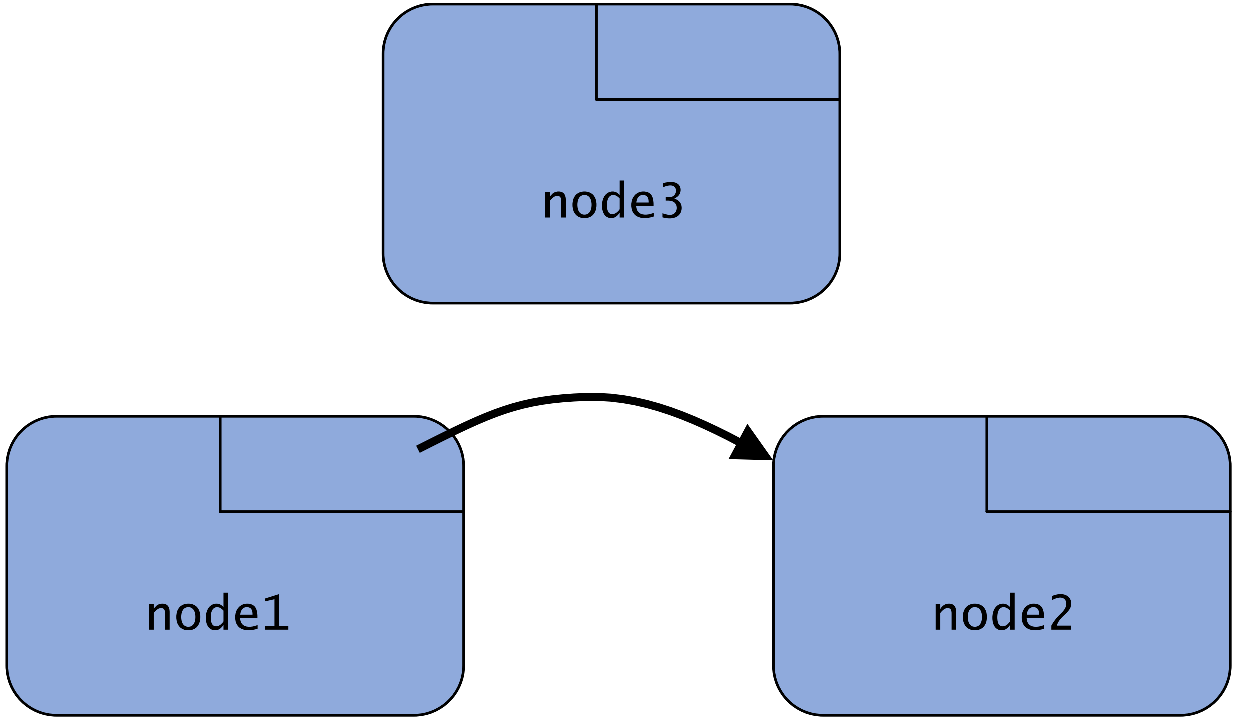


```
public class Node {
     private Node next;
     private String data1;
     private int data2;
     public Node(???) {
          ???
     }
     public Node getNext() {
          return next;
     }
     public void setNext(Node next) {
          this.next = next;
     }
}
```

Linked List



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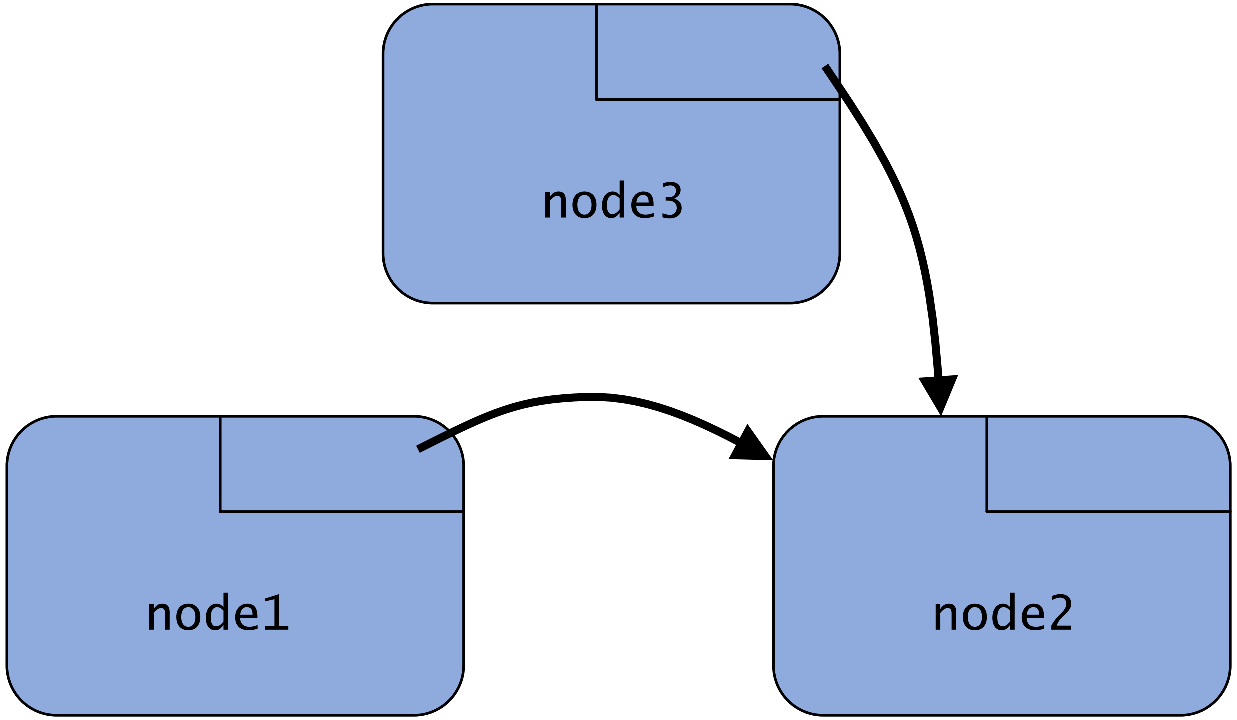

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// Linked List insertion??
node1.setNext(node3);
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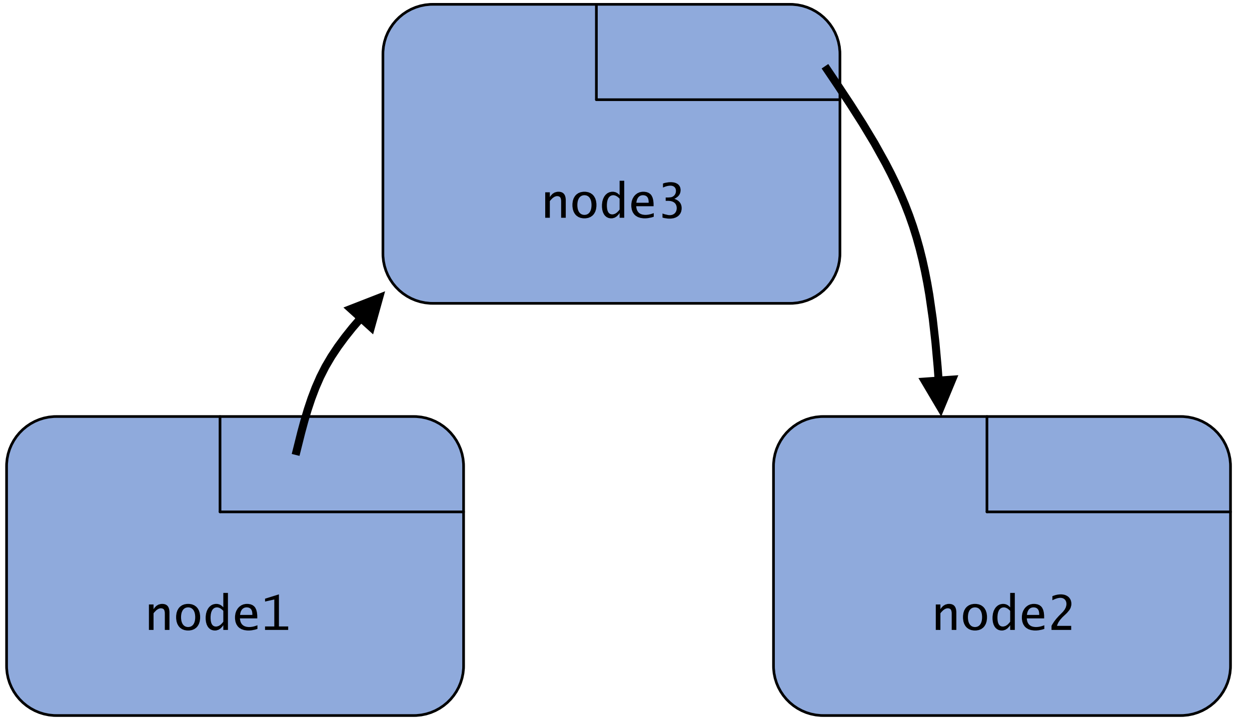

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Time complexity?

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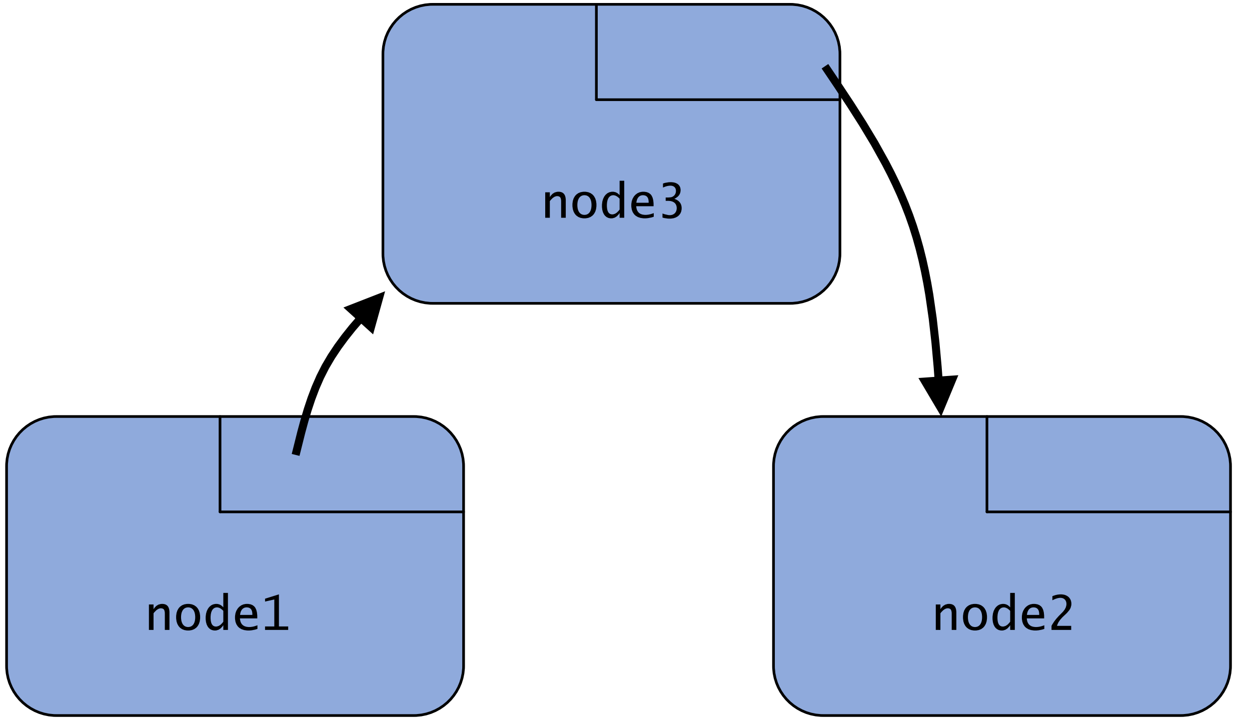

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