Queue

Queue ADT - FIFO

- Elements of some proper type of T
- Operations
    - Feature: First In, First Out
    - void push(T t)
    - void pop()
    - T front()
    - bool empty()
    - unsigned int size()
    - Constructors and destructors

Operation Number	Command	Stack
1	Q.push(Ant)	Ant
2	Q.push(Bee)	Bee
3	Q.push(Cat)	Cat
4	Q.push(Dog)	Dog

> *What if we were to do Q.pop()?*

Operation Number	Command	Stack
1	Q.push(Bee)	Bee
2	Q.push(Cat)	Cat
3	Q.push(Dog)	Dog

Stack Uses

- Buffers
- Breadth first search
- Simulations
- Producer-Consumer Problems

Breadth first search Expanded

- Used to find the shortest path to the start to the goal
- Starting from Node start
- Visit all neighbors of the node

- Stop
  - if the neighbor is the goal
- Otherwise
  - Visit neighbors two hops away
- Repeat until visiting all neighbors

Breadth First Visualized