

CS 360 100P

Fibonacci Heaps

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Topics to learn

Please read up on the following subjects:

- circular doubly-linked lists
- fibonacci heaps

Tasks to perform

Implement a fibonacci heap class. Provide the following operations:

- insert
- findMin
- union
- extractMin
- decreaseKey
- delete

Implement a complete mini-interpreter that processes requests to manipulate a fibonacci heap.

You must implement this data structure using the Java programming language. You must provide a makefile.

Other concepts

Be able to describe to your mentor the complexity of each operation in the public interface of your fibonacci heap using order notation.

Be able to describe the relationship between a fibonacci heap and a priority queue.

Be able to describe at least two common applications of a priority queue.