Internationale Hochschule, DSOPDJK
Semester 2
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Queues

Inhalt

Was ist eine Queue

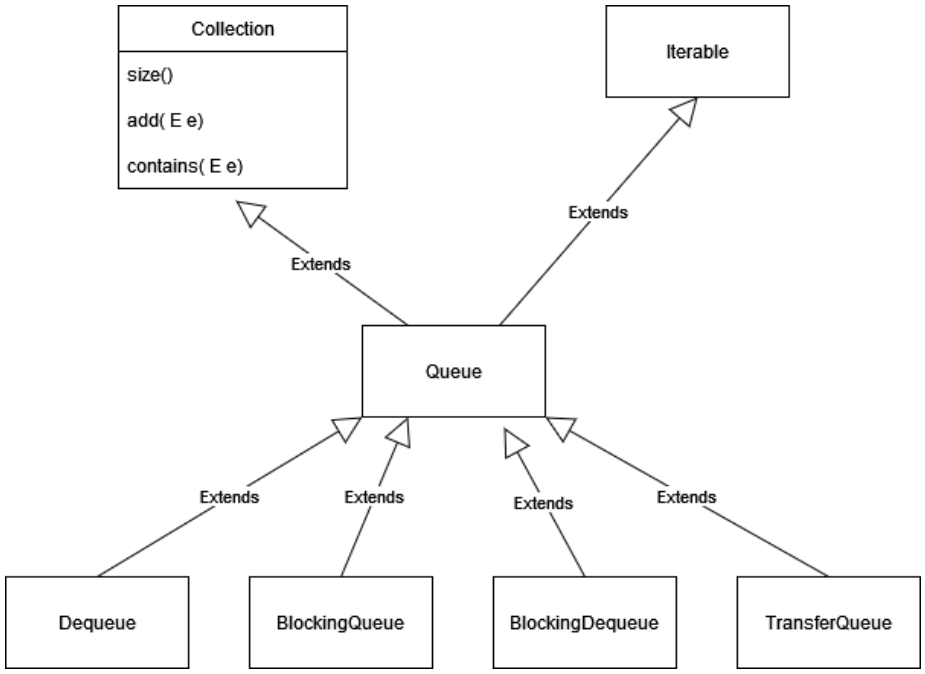
- Datenstruktur
- First In First Out -> Zuerst eingefügtes Element wird als ersten ausgegeben
- Priority Queue-> Elemente anhand Wichtigkeit oder andere Vorgabe sortiert
- Dequeue -> Einfügen und entfernen an beiden Seiten möglich
- BlockingQueue -> Nur ein Thread kann auf die Queue zugreifen
- TransferQueue -> Bildet Transaktion

Quellen:

Queue (Java Platform SE 8). (2024, April 4).
https://docs.oracle.com/javase/8/docs/api/java/util/Queue.html

Collection(Java Platform SE 8). (2024, April 4).
https://docs.oracle.com/javase/8/docs/api/java/util/Collection.html

Interfaces



Quellcode

MyQueue.java

```
package Queue;

public class MyQueue<T>{

    Node<T> head;
    Node<T> tail;

    public MyQueue(){
        this.tail = null;
        this.head = null;
    }

    public void add (T element){
        Node<T> newNode = new Node<>();
        newNode.data = element;
        try{
            if(head == null && tail == null){
                this.head = this.tail = newNode;
            }else{
                this.tail.next = newNode;
                this.tail = newNode;
            }
        }catch(Error e){
            throw new RuntimeException("insert gone wrong");
        }
    }

    public boolean offer(T element){
        Node<T> newNode = new Node<>();
```

```
        newNode.data = element;
        try{
            if(head == null && tail == null){
                this.head = this.tail = newNode;
            }else{
                this.tail.next = newNode;
                this.tail = newNode;
            }
            return true;
        }catch(Error e){
            return false;
        }
    }

    public T remove(){

        try{
            Node<T> rmElement = this.head;
            this.head = rmElement.next;
            return rmElement.data;
        }catch(Error e){
            throw new RuntimeException("remove gone wrong");
        }
    }

    public T poll(){
        Node<T> rmElement = this.head;
        this.head = rmElement.next;
        return rmElement.data;
    }

    public T element(){
        return this.head.data;
    }

    public T peek(){
        return this.head.data;
    }
}
```

Node.java

```
package Queue;

public class Node<T> {
    public T data;
    public Node<T> next;

    public Node(){
        this.next = null;
        this.data = null;
    }
}
```