

**Übungsblatt:** 6**1. Abgabepartner:** Matthias Wolff (458 766)**2. Abgabepartner:** Anton Mende (461 328)**2. Abgabepartner:** Anika Herbermann (461 655)

## Aufgabe 18

Primärschlüssel: **pk**Sekundärschlüssel: **sk**

Relation "Kunde"(pk: kundenId, sk: buchungsId)

kundenId	name
1	Aaron Eckhart
2	Michael Caine
3	Maggie Gyllenhaal

Relation "Pizza"(pk: pizzald, sk: buchungsId)

pizzald	name	preis
1	Hollandaise	5,80
2	Cipolla	5,80
3	Tonno	6,80
4	Zingara	6,80
5	Gyros	6,80
6	Toscana	7,50

Relation "Bestellung"(pk: buchungsId, sk: kundenId (Kunde), pizzald (Pizza))

buchungsId	buchungsZeitpunkt	pizza	kunde
1	17.06.2017 11:58:29	2	1
2	17.06.2017 14:28:58	5	1
3	17.06.2017 16:19:22	6	2
4	17.06.2017 18:21:31	1	3

```
1 import java.util.Collection;
import java.util.ArrayList;

4 class Kunde {
    protected String kundenId;
    protected String name;
7    protected Collection<Bestellung> buchung = new ArrayList<Bestellung>();

    public Kunde(String kId, String n){
10        kundenId = kId;
        name = n;
    }

13
    public String getKundenId(){return kundenId;}
    public void setKundenId(String kId){kundenId = kId;}

16
    public String getName(){return name;}
    public void setName(String newName) {name = newName;}

19
    public Collection<Bestellung> getBuchung() {
        return buchung;
22    }
    public void setBuchung(Collection<Bestellung> coll) {
        buchung = coll;
25    }
    public void addBuchung(Bestellung vorgang) {
        buchung.add(vorgang);
28    }
    public void removeBuchung(Bestellung vorgang) {
        buchung.remove(vorgang);
31    }
}
```

```
1 import java.util.ArrayList;
import java.util.Collection;

4 class Pizza {
    protected int pizzaId;
    protected double preis;
7    protected String name;
    protected Collection<Bestellung> buchung = new ArrayList<Bestellung>();

10    public Pizza(int pId, double p, String n){
        pizzaId = pId;
        preis = p;
13        name = n;
    }

16    public int getPizzaId(){return pizzaId;}
    public void setPizzaId(int pId){pizzaId=pId;}

19    public double getPreis(){return preis;}
    public void setPreis(dpuble p) {preis=p;}

22    public String getName(){return name;}
    public void setName(String n){name=n;}

25    public Collection<Bestellung> getBuchung() {
        return buchung;
    }

28    public void setBuchung(Collection<Bestellung> coll) {
        buchung = coll;
    }

31    public void addBuchung(Bestellung vorgang) {
        buchung.add(vorgang);
    }

34    public void removeBuchung(Bestellung vorgang) {
        buchung.remove(vorgang);
    }

37 }
```

```
class Bestellung{
2   protected int buchungsId;
   protected LocalDateTime zeitpunkt;
   protected Kunde kunde;
5   protected Pizza pizza;

   Bestellung(LocalDateTime z, int bId, Kunde k, Pizza p){
8       zeitpunkt = z;
       buchungsId = bId;
       kunde=k;
11      pizza=p;
   }

14   public int getBuchungsId(){return buchungsId;}
   public void setBuchungsId(int bId){buchungsid =bId;}

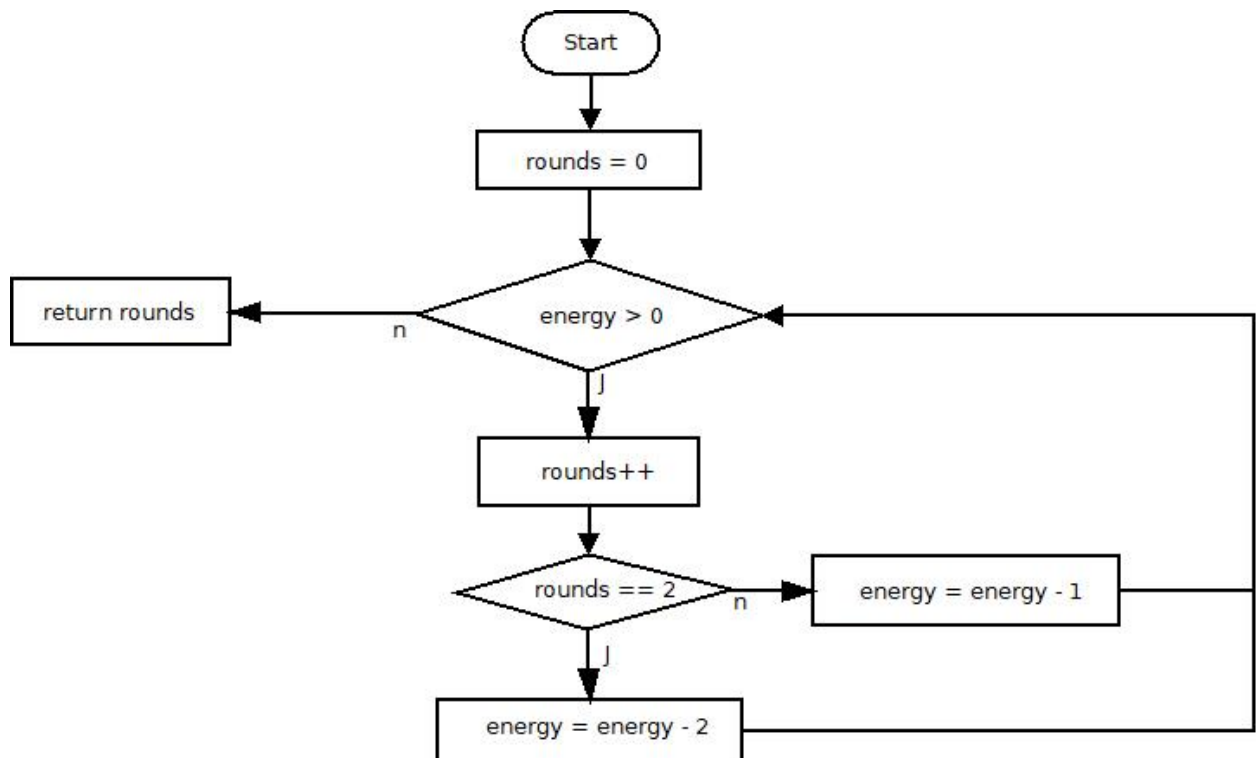
17   public LocalDateTime getZeitpunkt(){return zeitpunkt;}
   public void setZeitpunkt(LocalDateTime zp){zeitpunkt = zp;}

20   public Kunde getKunde(){ return kunde;}
   public void setKunde(Kunde k){kunde = k;}

23   public Pizza getPizza(){return pizza;}
   public void setPizza(Pizza p){pizza =p;}
}
```

## Aufgabe 20

a)



- b)
- [rounds, rounds = 0, return rounds]
  - [rounds, rounds++, rounds == 2]
  - [rounds, rounds++, rounds++]
  - [rounds, rounds++, return rounds]
  - [energy, energy = energy - 1, energy > 0]
  - [energy, energy = energy - 2, energy > 0]

c) "Energy = 0" durchläuft Kette 1, "Energy = 3" durchläuft Kette 2 - 6.

