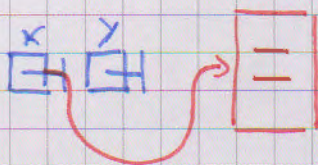


Klassen

Deklaration

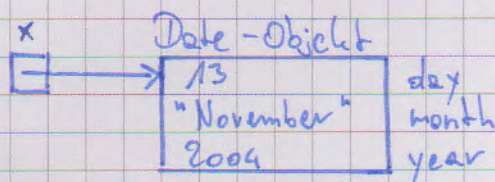
class ^{Name} Date {

```
    int day;
    string month;
    int year;
}
```



Verwendung des Typen

```
Date x, y;
x = new Date();
```



Date Variablen sind Zeiger auf Objekte

Zugriff

```
x.day = 13;
x.month = "November";
x.year = 2004;
```

Objekte

Objekte müssen erzeugt werden

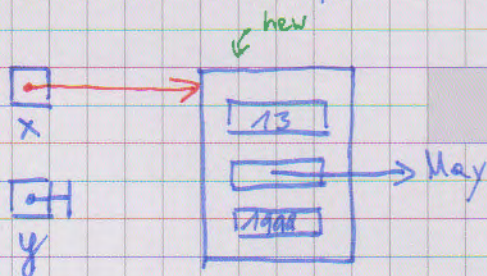
```
Date x, y;
```

```
x = new Date();
```

Klasse ≈ Keksgesteck

Heap ≈ Teig

Objekt ≈ Keks

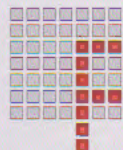


Obj: ist Instanz einer Klasse

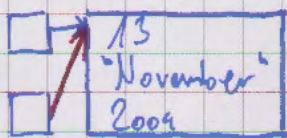
```
x.day = 13;
```

```
x.month = "May";
```

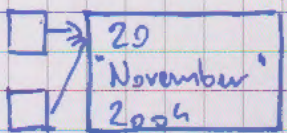
```
x.year = 1999;
```

Zuweisung

 $y \leftarrow x;$

 day
month
year

Zeigerzuweisung

 $y.\text{day} = 20;$

 day
month
year

ändert auch x-day

Zuweisungen sind erlaubt wenn alle Typen gleich sind

class Date {

 int day;
string month;
int year;
}

class Address {

 int number;
string street;
int zipCode;
}
 $d_1 = d_2$

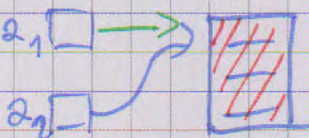
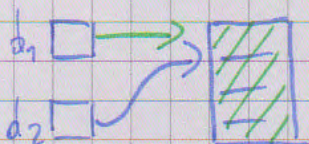
// ok gleiche Typen

 $a_1 = a_2$

// ok gleiche Typen

 $d_1 = a_2$

// verboten verschiedene Typen trotz gleicher Struktur

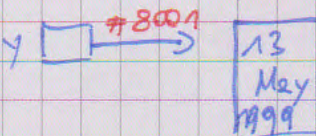
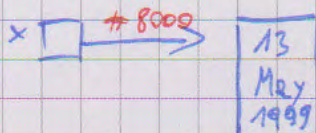


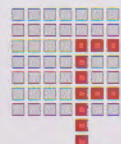
Vergleiche

Date x = new Date();

 $x.\text{day} = 13;$
 $x.\text{month} = \text{"May"};$
 $x.\text{year} = 1999;$

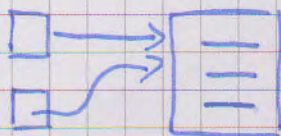
Date y = new Date();

 $y.\text{day} = 13;$
 $y.\text{month} = \text{"May"};$
 $y.\text{year} = 1999;$
 $\#8000$ $\#8001$
 if (x == y) → False




```
Date x = new Date();
```

```
x.day = 13;  
x.month = "May";  
x.year = 1999;
```



```
Date y = x;
```

```
if (x == y) → True
```

Auf Inhalt vergleichen

```
static boolean equal(Date d1, Date d2) {
```

```
    return d1.day == d2.day &&
```

```
        d1.month.equals(d2.month) &&
```

```
        d1.year == d2.year;
```

```
}
```

Wo werden Klassen angelegt

In einer einzigen Datei

```
class C1 {
```

```
    ...  
}
```

```
class C2 {
```

```
    ...  
}
```

```
class MainProgramm {
```

```
    public static void main(String[] arg) {
```

```
    }  
}
```

ini

in getrennten

```
class C1 {
```

```
    ...  
}
```

```
class C2 {
```

```
    ...  
}
```

```
class MainProgramm {
```

```
    public static void main(String[] arg) {
```

```
    }  
}
```

ini

```
class Person {
```

```
    String name;  
    int place;  
}
```

```
Person[] book = new Person[10];  
book[0] = new Person();
```