

Pass by Value

```
static void m_int(int x, int y) {
    int temp = x;
    x = y;
    y = temp;
}
static void m_arr(int[] x) {
    x[0] = x[1];
}
static void m_str(String x, String y) {
    x = y;
}
public static void main(String[] args) {
    int[] x = {1,2};
    String name = "ETH";
    m_int(x[0], x[1]);
    m_arr(x);
    m_str(name, "EPFL");
    Out.println(x[0] + "," + x[1] + "," + name);
}
```

Was wird ausgegeben?

(1) 1,1,ETH

(2) 1,2,ETH

(3) 2,1,ETH

(4) 2,2,ETH

(5) 1,1,EPFL

(6) 1,2,EPFL

(7) 2,1,EPFL

(8) 2,2,EPFL

Erklärung I

```
static void m_int(int x, int y) {
    Out.println("2: x=" + x + ", y=" + y);
    int temp = x;
    x = y;
    y = temp;
    Out.println("3: x=" + x + ", y=" + y);
}

public static void main(String[] args) {
    int i = 1;
    int j = 2;
    Out.println("1: i=" + i + ", j=" + j);
    m_int(i,j);
    Out.println("4: i=" + i + ", j=" + j);
}
```

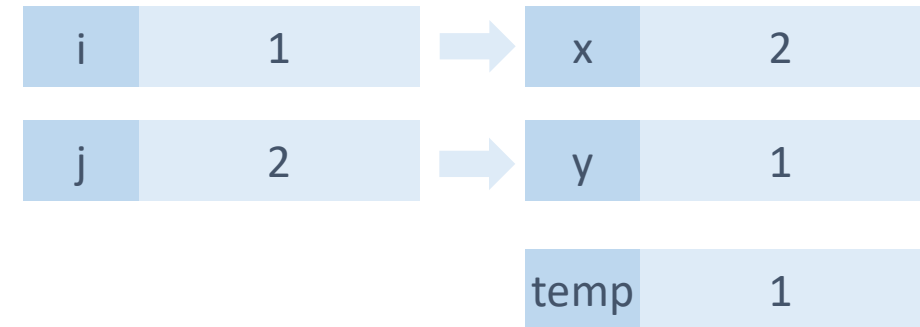
Ausgabe:

1: i=1, j=2

2: x=1, y=2

3: x=2, y=1

4: i=1, j=2



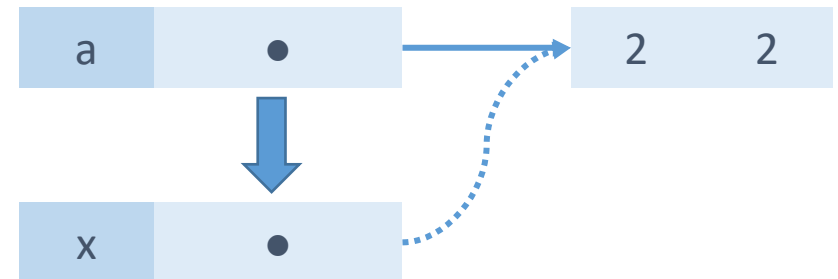
Erklärung II

```
static void m_arr(int[] x) {  
    x[0] = x[1];  
}  
  
public static void main(String[] args) {  
    int[] a = new int[2];  
    a[0] = 1;  
    a[1] = 2;  
    Out.println("1: a[0] = " + a[0]  
                + ", a[1] = " + a[1]);  
    m_arr(a);  
    Out.println("2: a[0] = " + a[0]  
                + ", a[1] = " + a[1]);  
}
```

Ausgabe:

1: a[0] = 1, a[1] = 2

2: a[0] = 2, a[1] = 2



Erklärung III

```
static void m_str(String x) {  
    Out.println("2: x= " + x);  
    x = "EPFL";  
    Out.println("3: x= " + x);  
}  
  
public static void main(String[] args){  
    String name = "ETH";  
    Out.println("1: name= " + name);  
    m_str(name);  
    Out.println("4: name= " + name);  
}
```

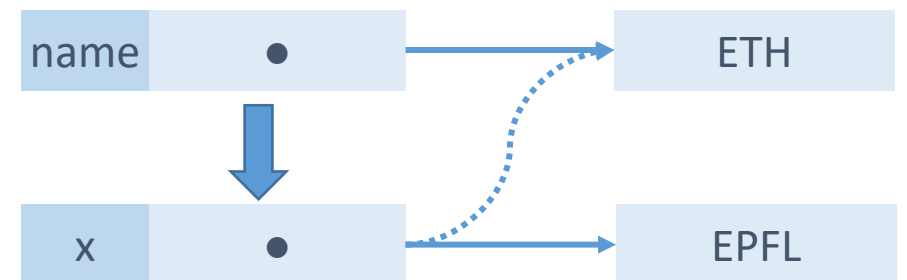
Ausgabe:

1: name= ETH

2: x= ETH

3: x= EPFL

4: name= ETH



Pass by Value

```
static void m_int(int x, int y) {  
    int temp = x;  
    x = y;  
    y = temp;  
}  
static void m_arr(int[] x) {  
    x[0] = x[1];  
}  
static void m_str(String x, String y) {  
    x = y;  
}  
public static void main(String[] args) {  
    int[] x = {1,2};  
    String name = "ETH";  
    m_int(x[0], x[1]);  
    m_arr(x);  
    m_str(name, "EPFL");  
    Out.println(x[0] + "," + x[1] + "," + name);  
}
```

Was wird ausgegeben?

(1) 1,1,ETH

(2) 1,2,ETH

(3) 2,1,ETH

 (4) 2,2,ETH

(5) 1,1,EPFL

(6) 1,2,EPFL

(7) 2,1,EPFL

(8) 2,2,EPFL