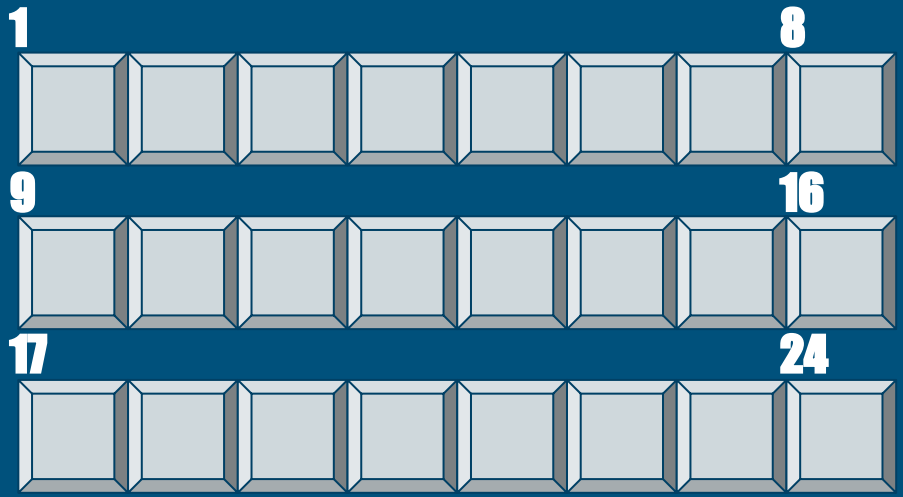
Pointer und Pointer-Magie

(incl. völlig verwirrender Pfeilchen...)

Variablen im Speicher

```
#include <iostream>
int main(){
    int a;
    a = 7;
    char c = 12;
    std::cout << c <<
std::endl;
}
```

Name	Type	Address



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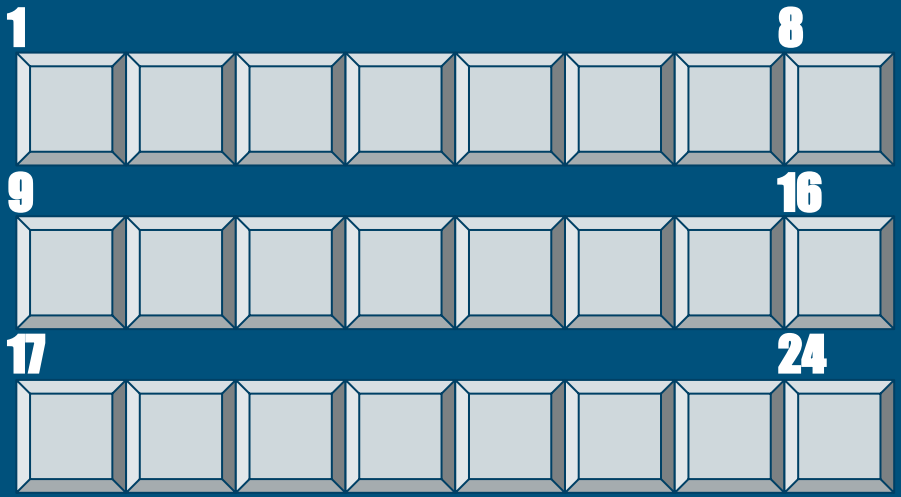

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#include <iostream>
int main(){
    int a;
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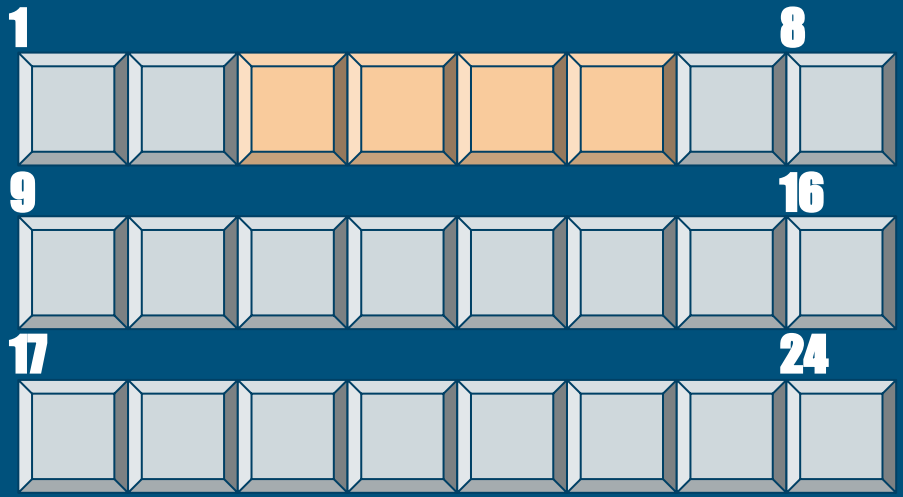
Name	Type	Address
a	int	3



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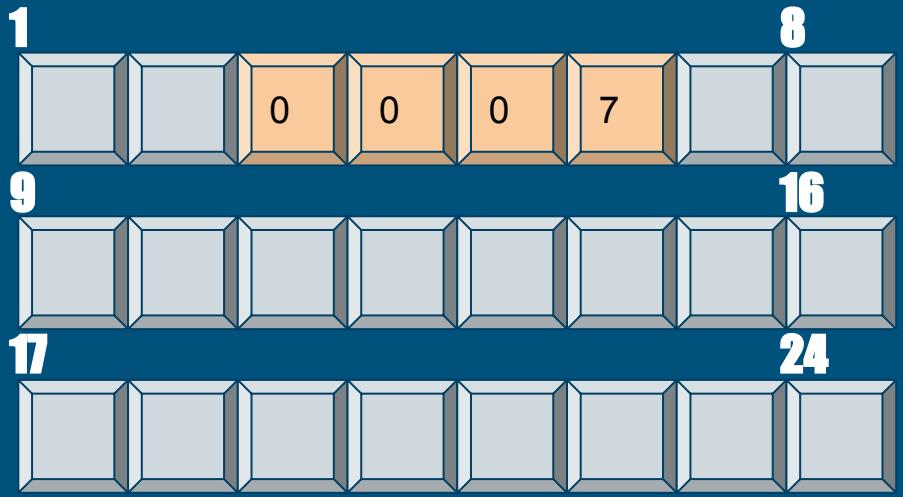

Variablen im Speicher

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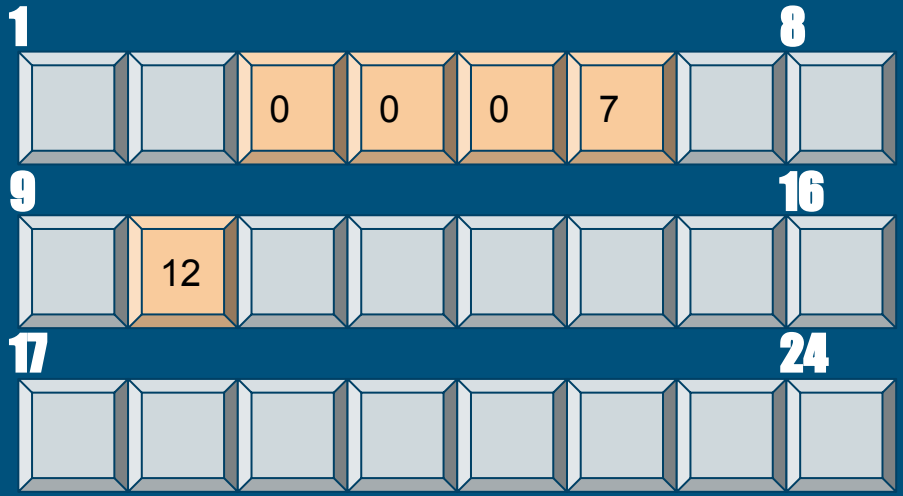
#include <iostream>
int main(){
    int a;
    a = 7;
    char c = 12;
    std::cout << c <<
std::endl;
}
```

Name	Type	Address
a	int	3
c	char	12



Variablen im Speicher

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#include <iostream>
int main(){
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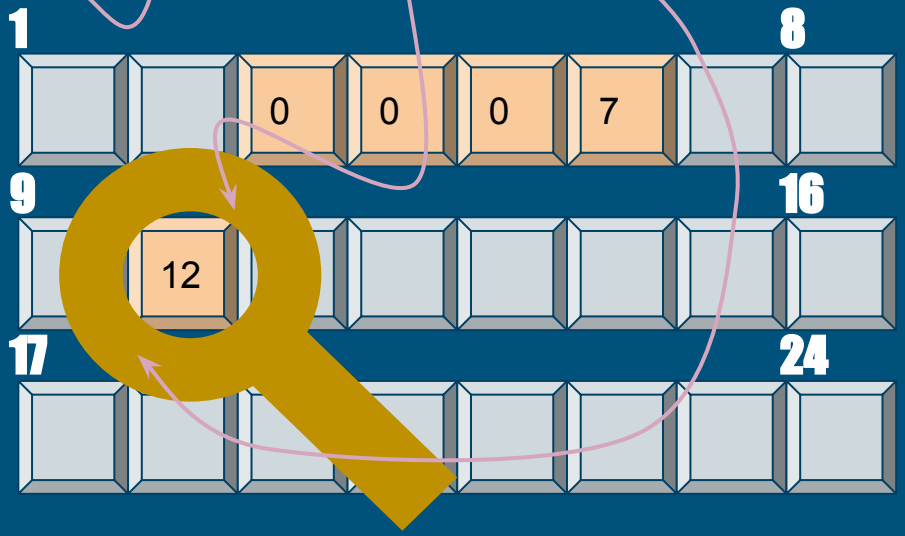
    std::cout << c <<
std::endl;
}
```

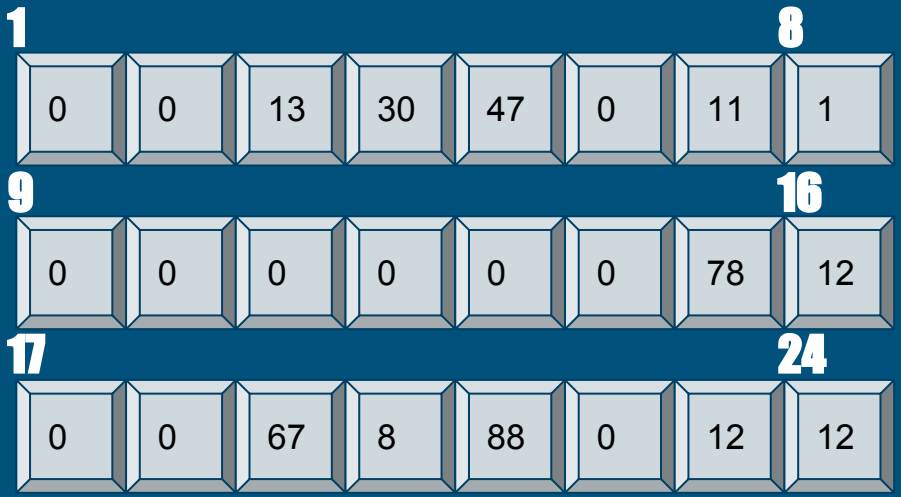
Name	Type	Address
a	int	3
c	char	10



Array’s und RAM-Müll

```
int main(){
    int arr[4];
    a[0] = 14;
    a[2] = 1;
    print(arr[1]);
}
```

Name	Type	Address



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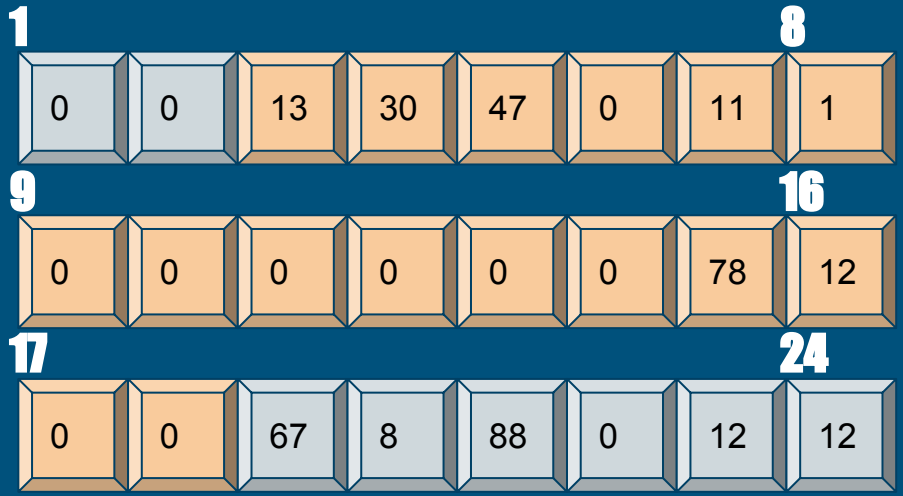

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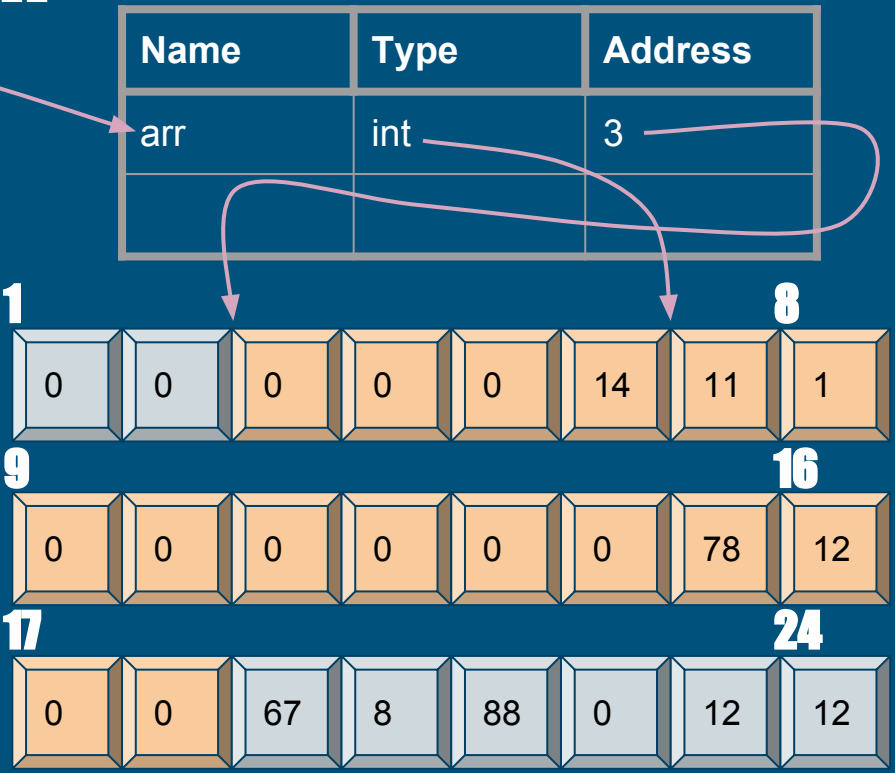

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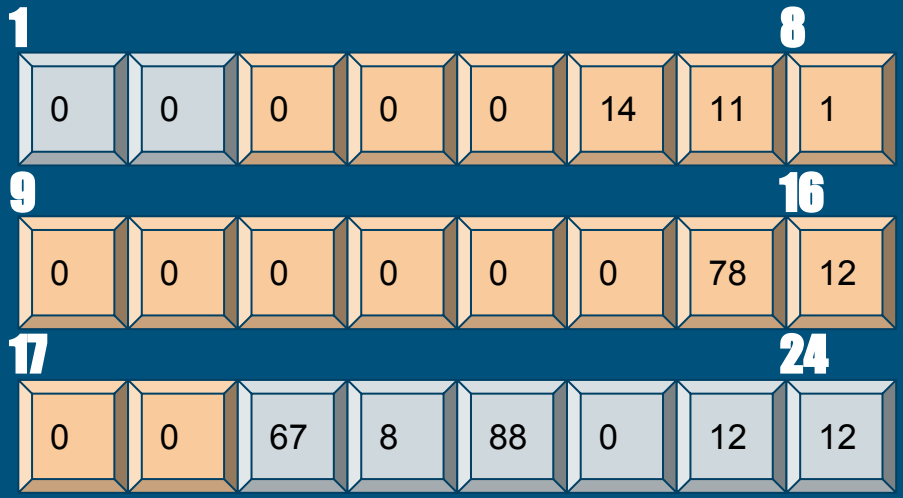

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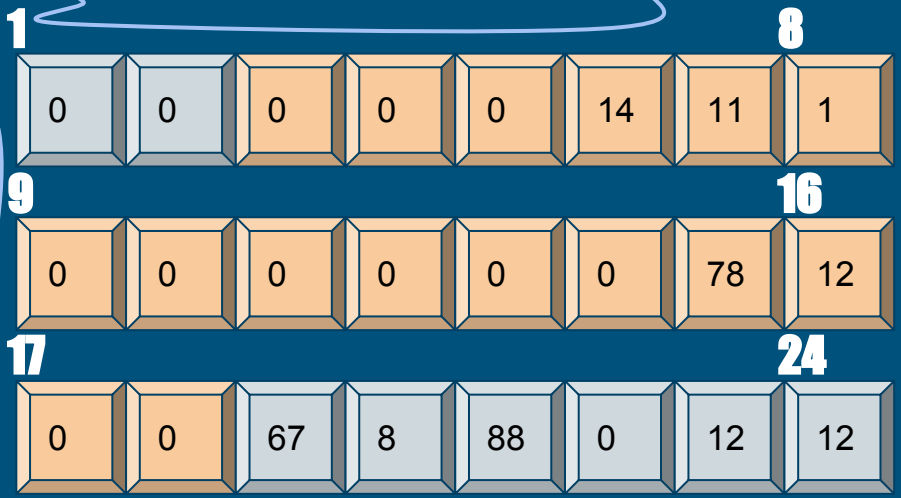

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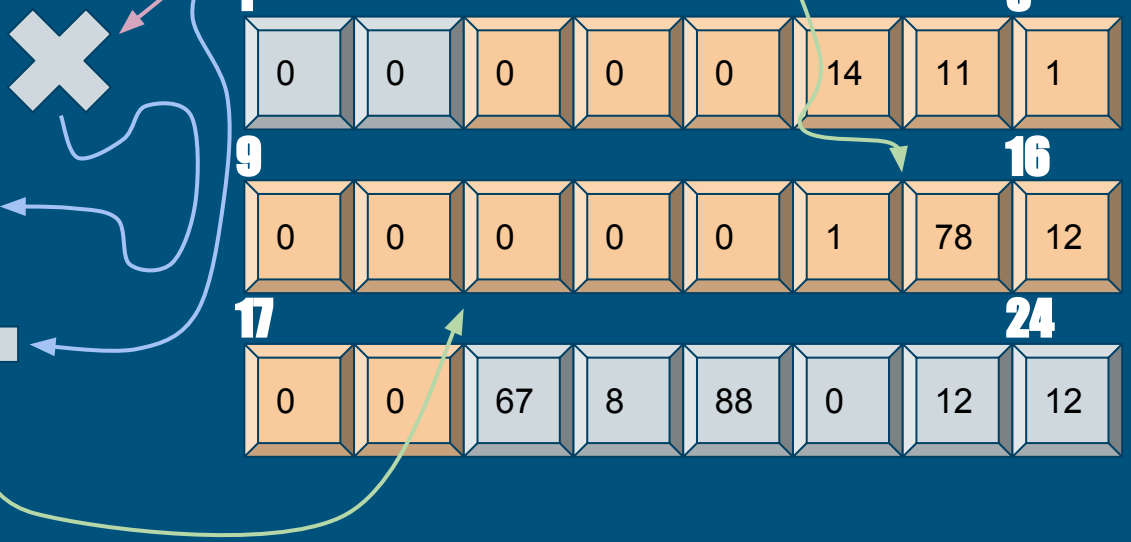

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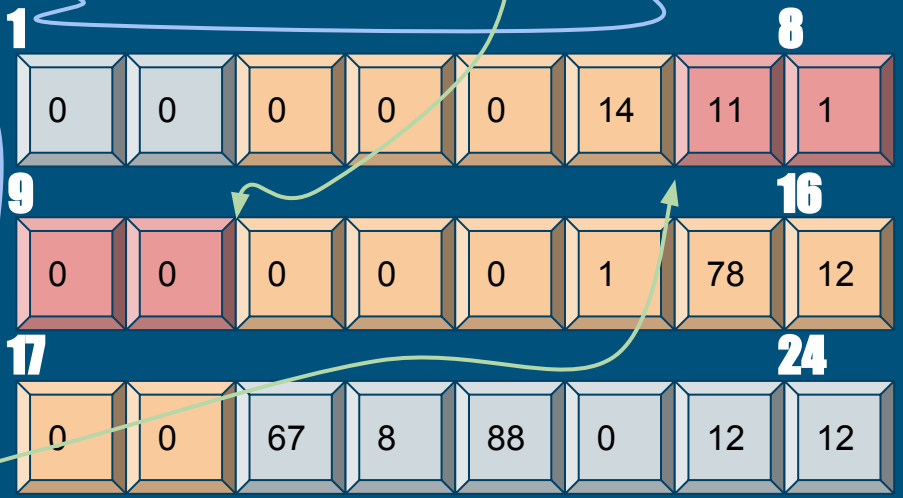

4

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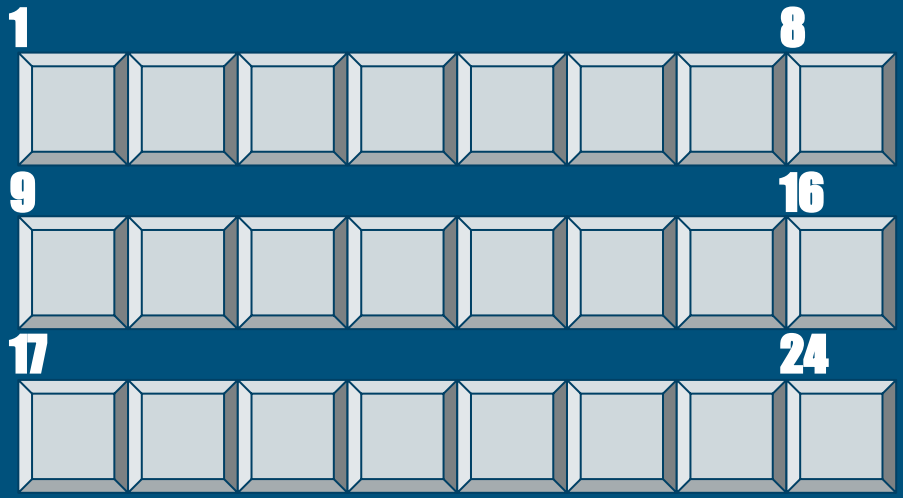
Pointer und Dereferenzierung

```
int main(){
    int  b = 25;
    int* p = &b;
    print( b);
    print( p);
    print(*p);
}
```

Name	Type	Address



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```
int main(){
    int  b = 25;
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    print( b);
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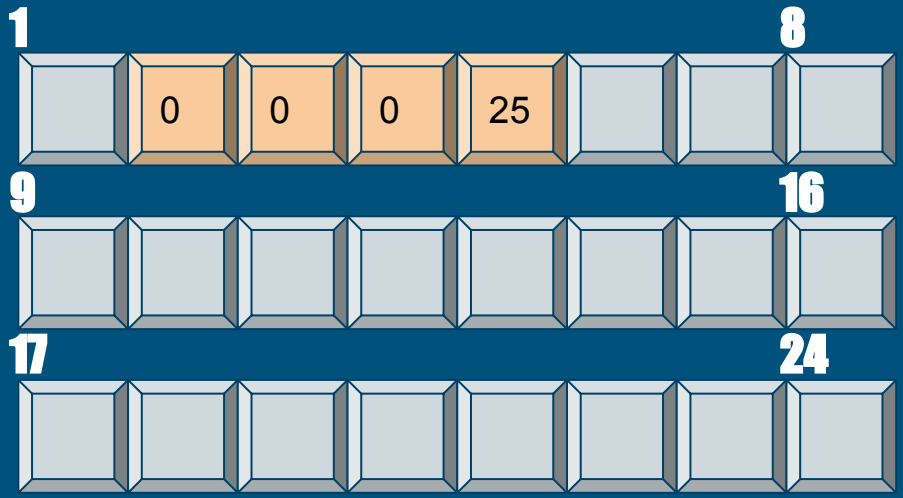
}
```

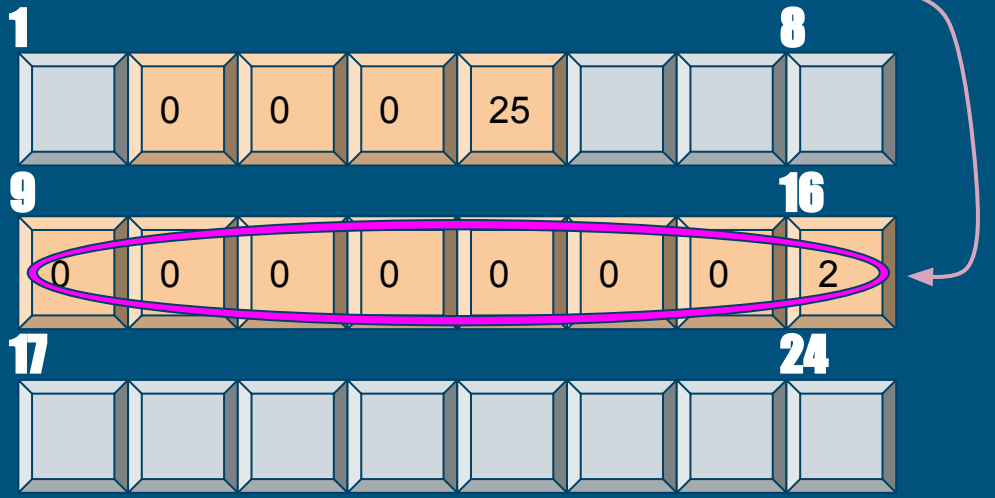
Name	Type	Address
b	int	2



Pointer und Dereferenzierung

```
int main(){
    int  b = 25;
    int* p = &b;
    print( b);
    print( p);
    print(*p);
}
```

Name	Type	Address
b	int	2
p	ptr (int)	9



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```
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}
```

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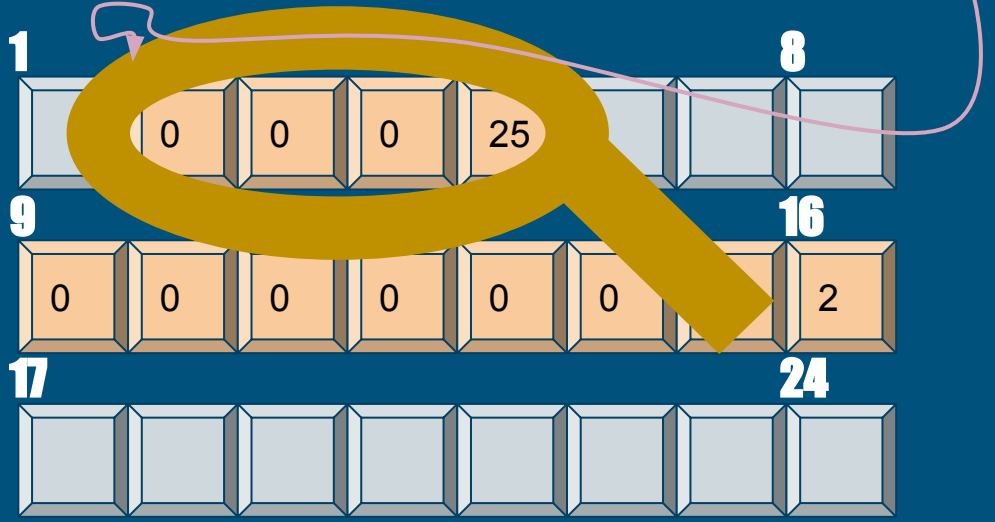

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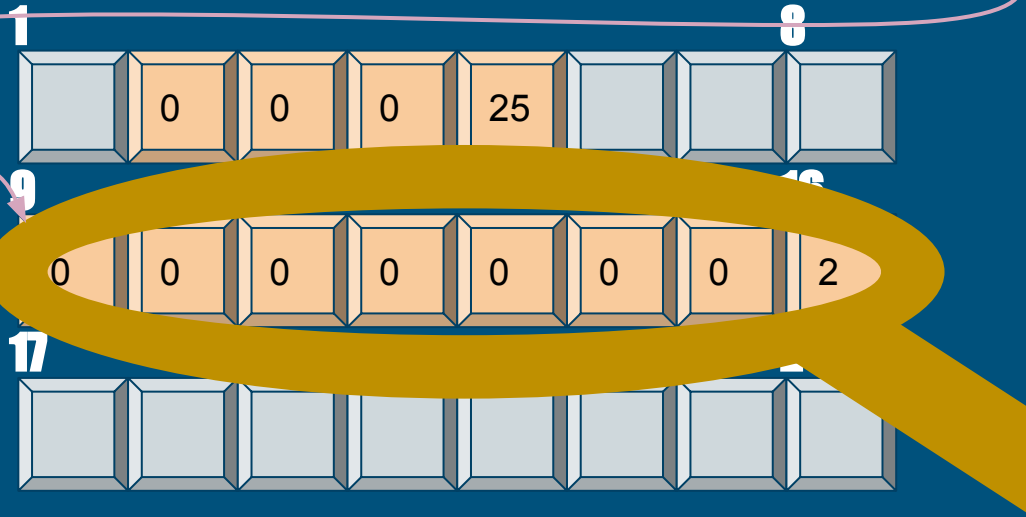

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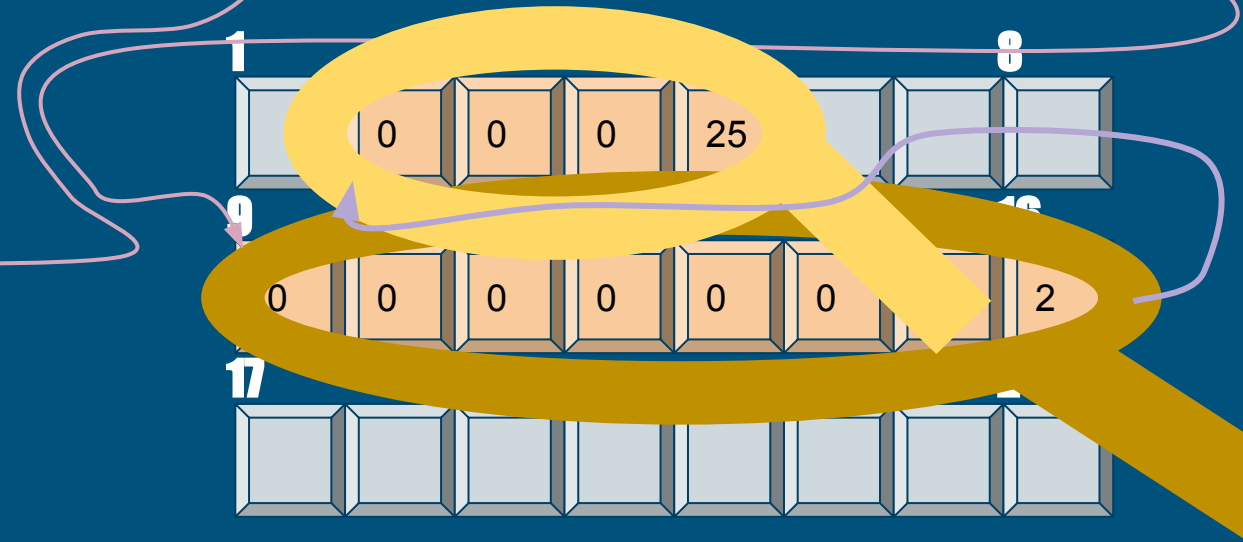
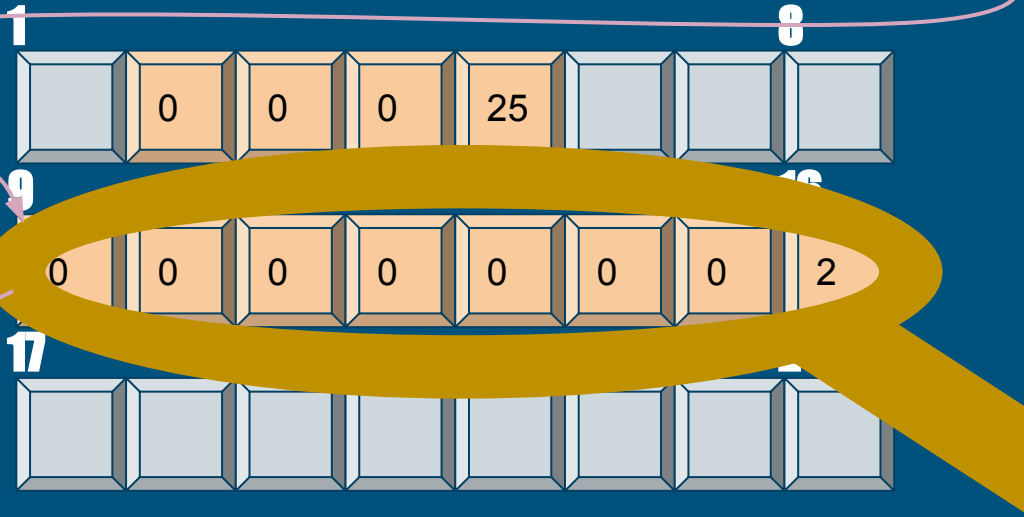


Pointer und Dereferenzierung (schrittweise)

```
int main(){
    int  b = 25;
    int* p = &b;
    print( b);
    print( p);
    print(*p);
    print(*(2));
}
```

Name	Type	Address
b	int	2
p	ptr (int)	9



Denk-Hilfe-Stellung!
Kein valider Ausdruck!

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ohne Tabelle!

Name	Type	Address
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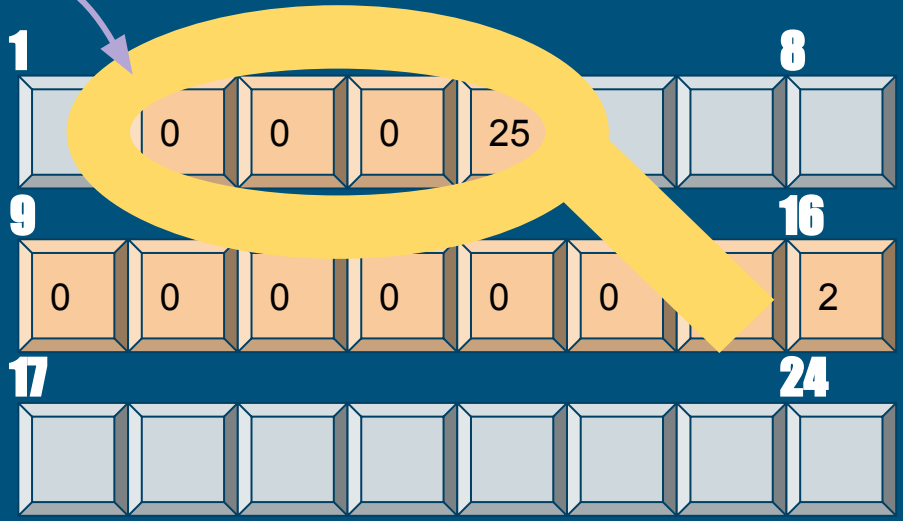
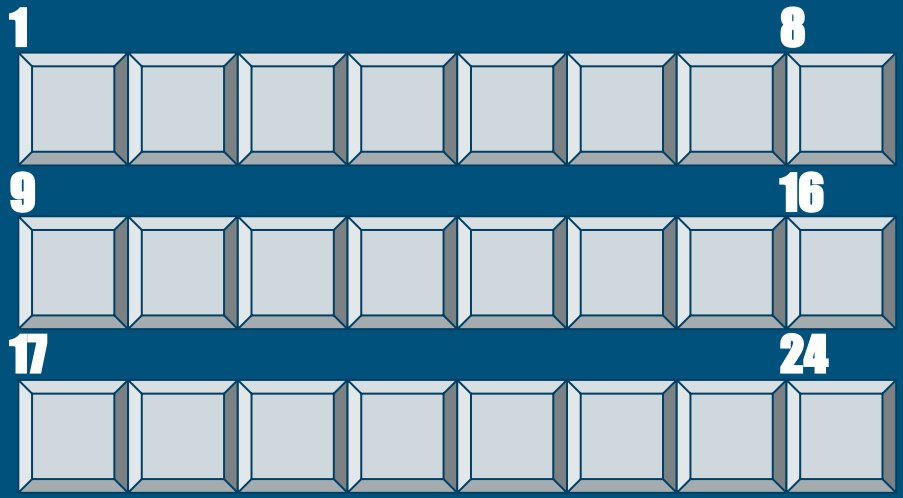


Pointerarithmetik

```
int main(){
    int a[3];
    int* p = &a[0];
    print(*p);
    p++;
    print(*p);
    print(*(p+1));
    print(a[2]);
    print(p[1]);
}
```

Name	Type	Address



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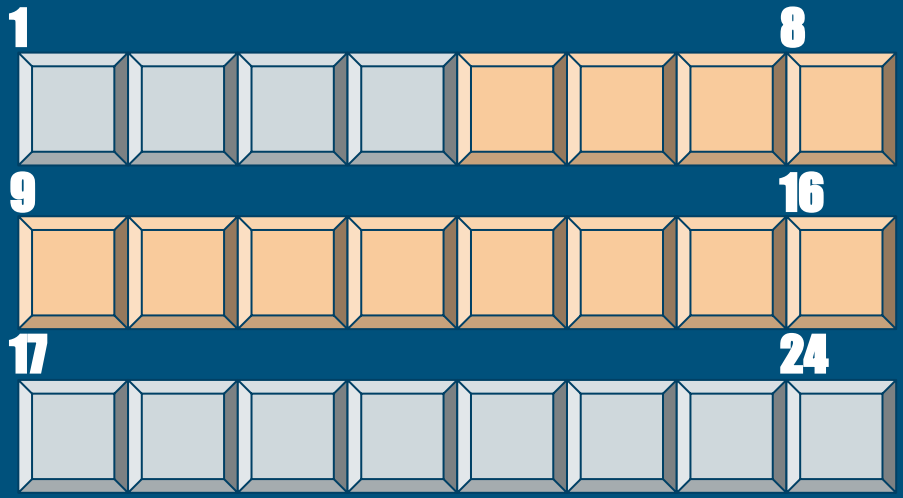
```

Name	Type	Address
a	int	5



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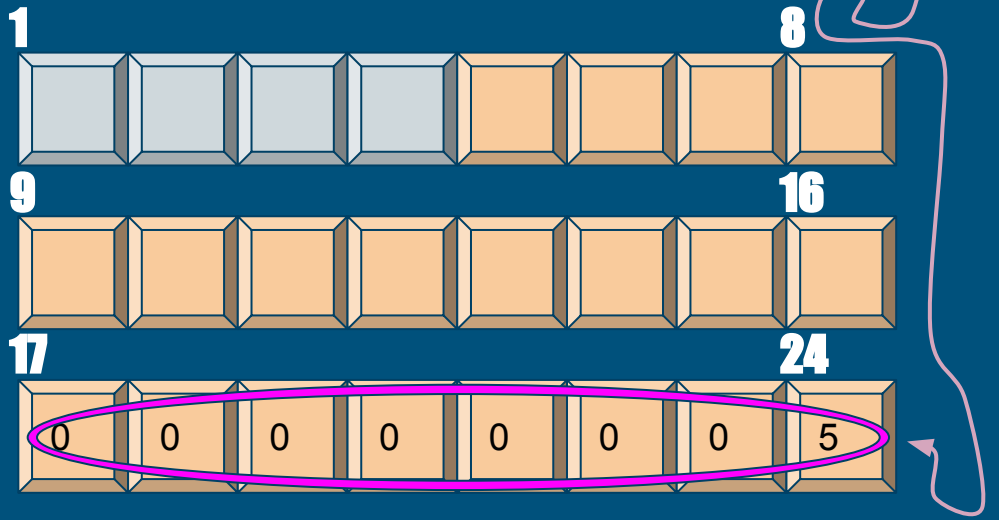
}
```

Name	Type	Address
a	int	5
p	ptr (int)	17



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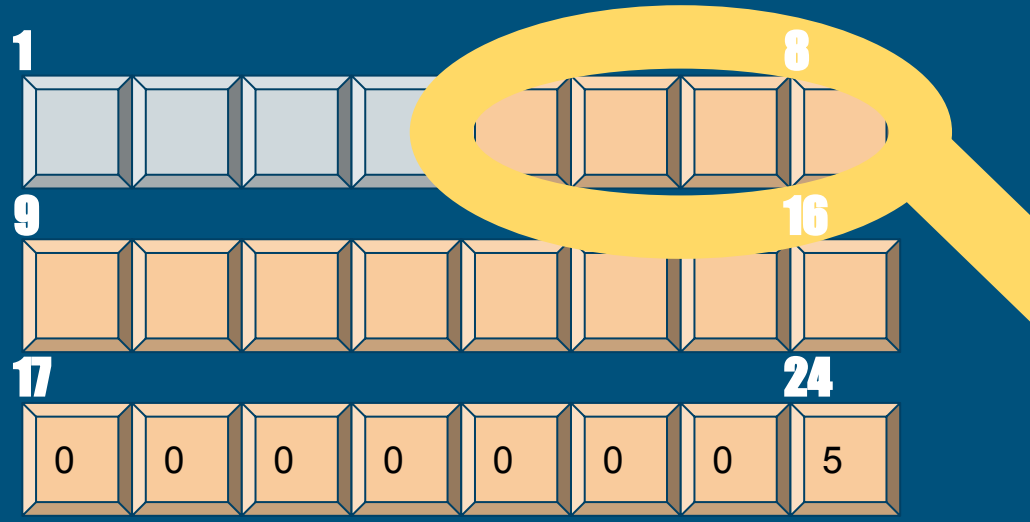

Warum?

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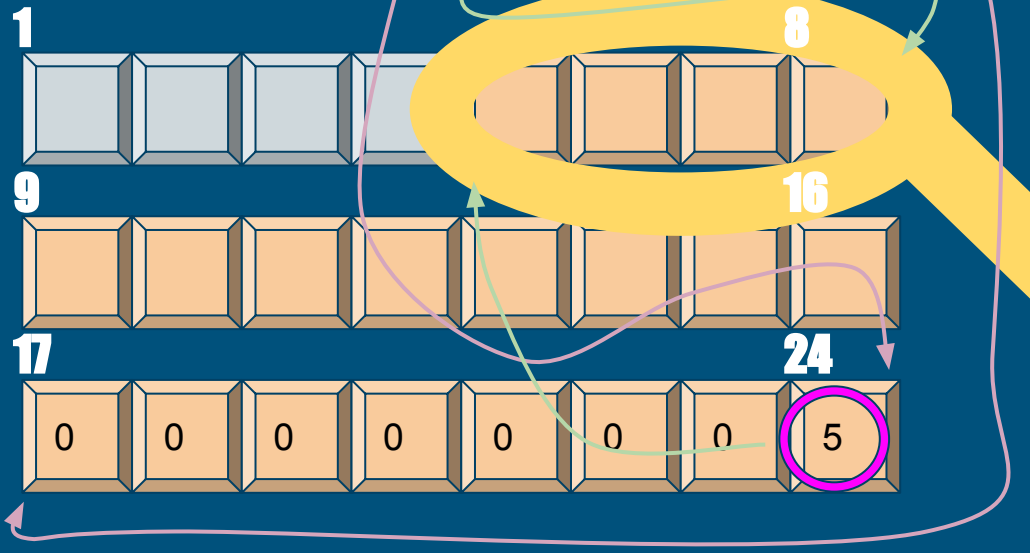

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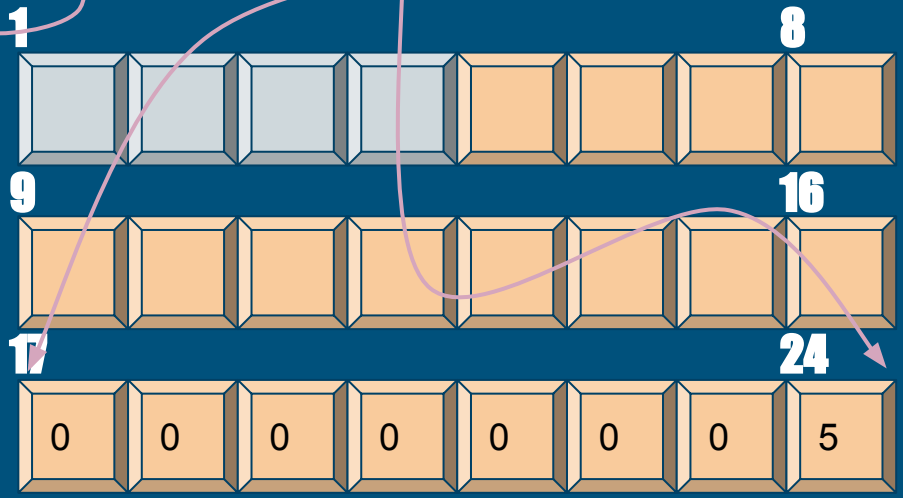

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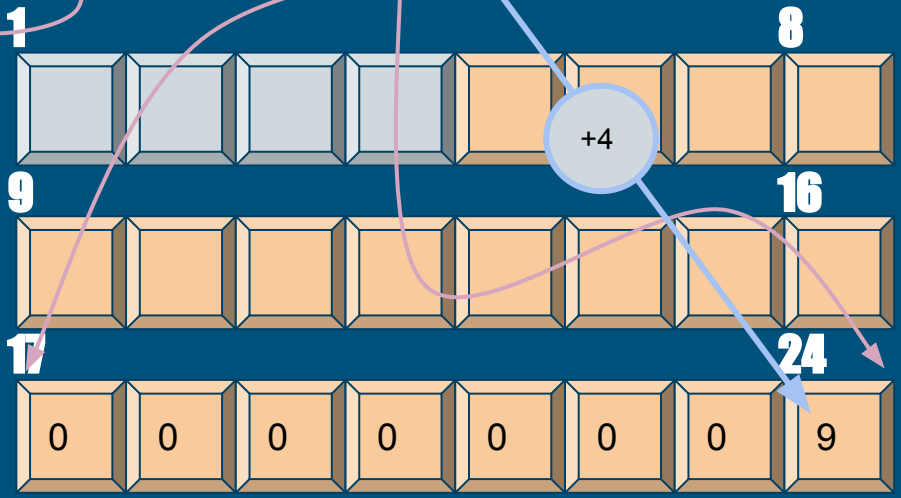

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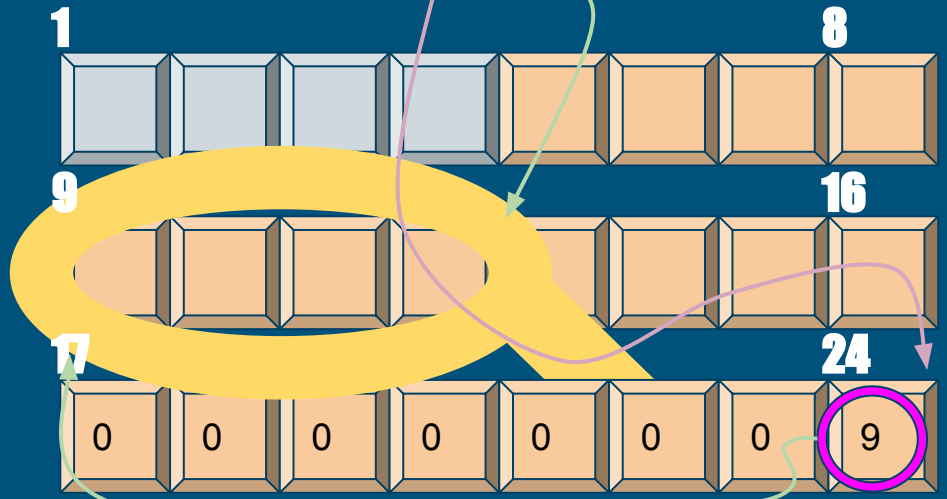

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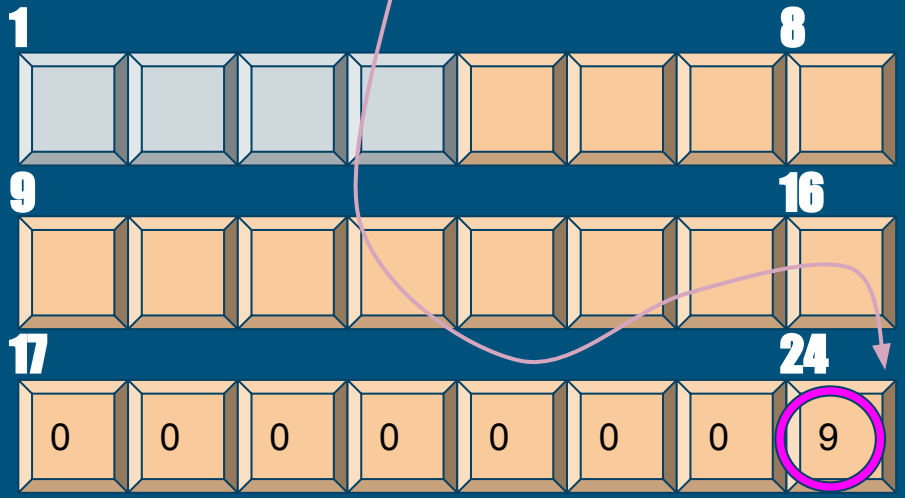

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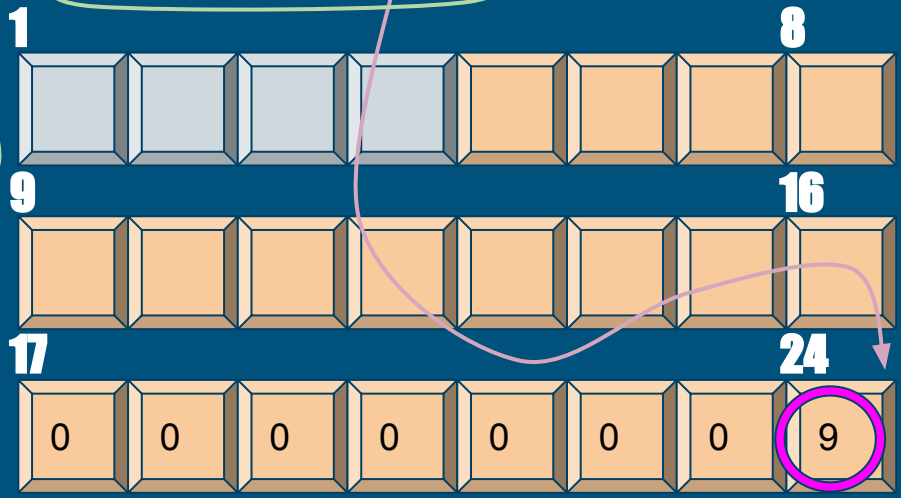

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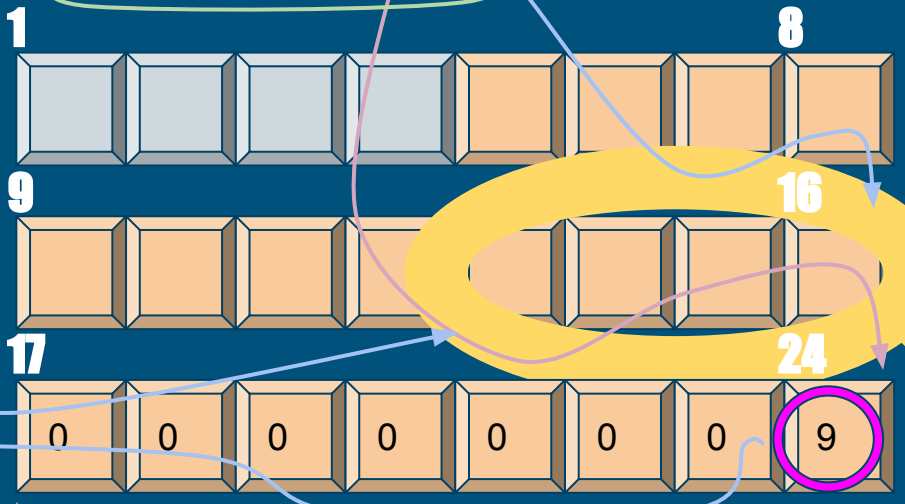

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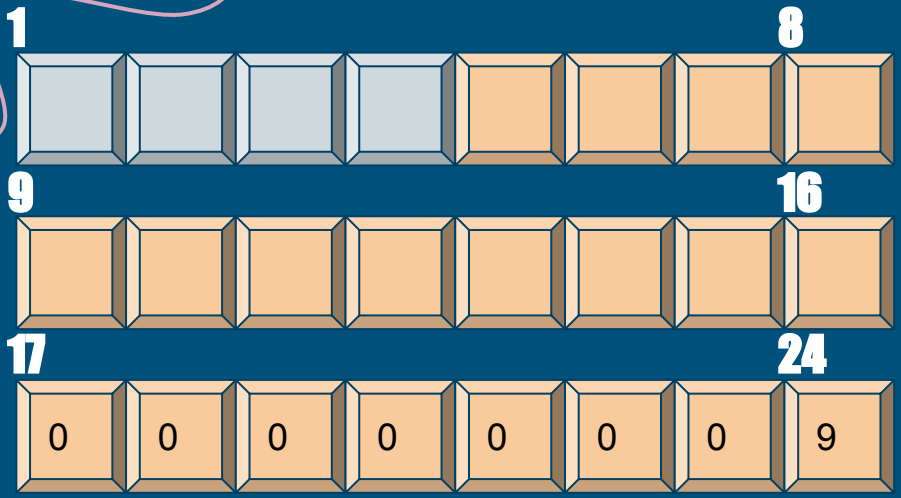

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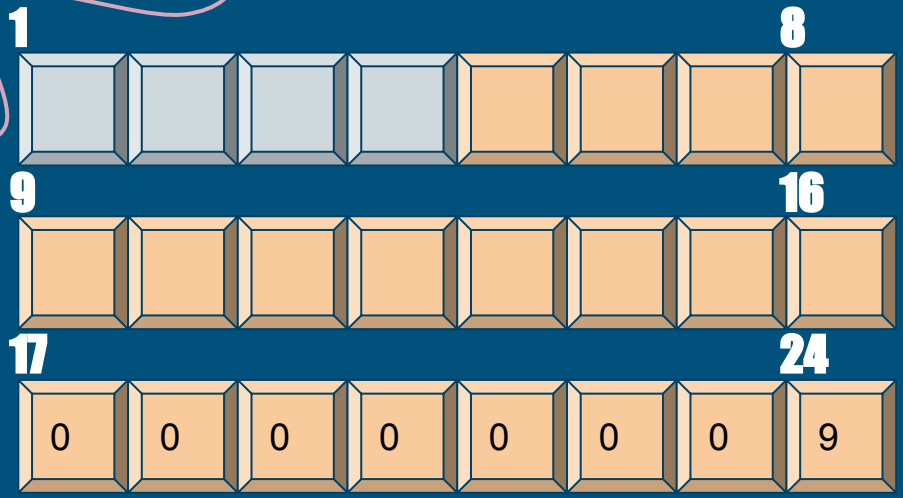

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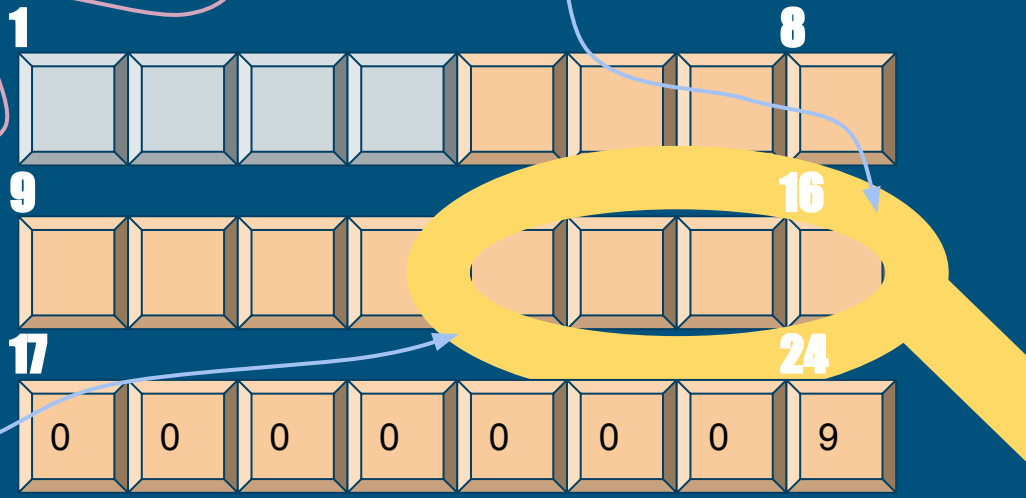

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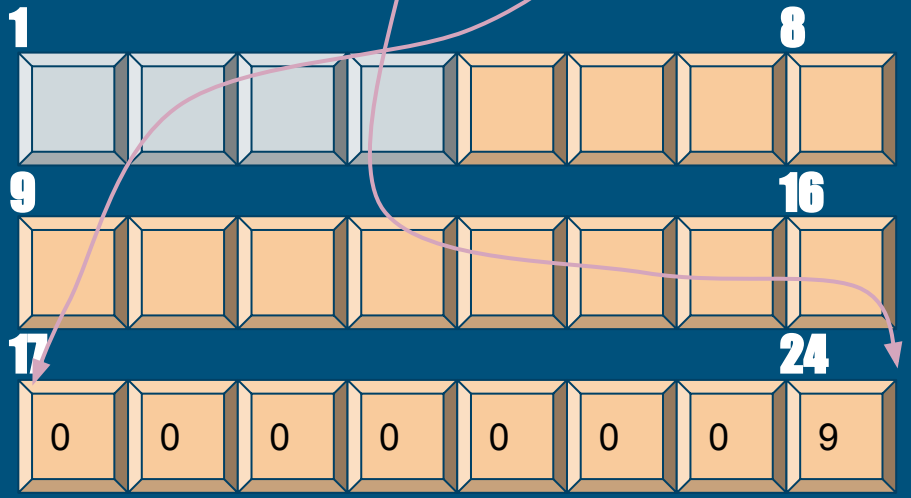
    int* p = &a[0];
    print(*p);
    p++;
    print(*p);
    print(*(p+1));
    print(a[2]);
    print(p[1]);
}
```

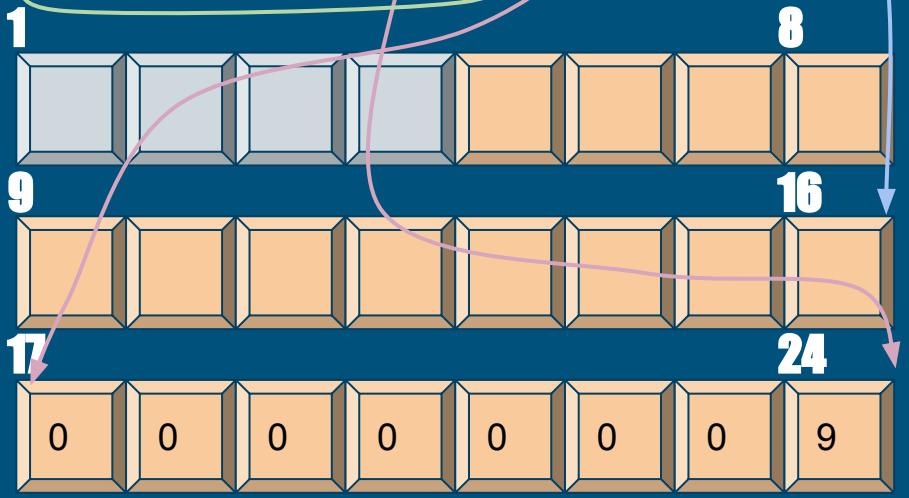
Name	Type	Address
a	int	5
p	ptr (int)	17



Pointerarithmetik

```
int main(){
    int a[3];
    int* p = &a[0];
    print(*p);
    p++;
    print(*p);
    print(*(p+1));
    print(a[2]);
    print(p[1]);
}
```

Name	Type	Address
a	int	5
p	ptr (int)	17



Pointerarithmetik

```
int main(){
    int a[3];
    int* p = &a[0];
    print(*p);
    p++;
    print(*p);
    print(*(p+1));
    print(a[2]);
    print(p[1]);
}
```

Name	Type	Address
a	int	5
p	ptr (int)	17