

22/05  
A) ~~not~~ virtual number under to be intrusive to day best

B) not intrusive, need  $\rightarrow$  no modify classes but  
in part we can use type id to no

C) now index how C++  $\rightarrow$  C++

Pass in pointer to the next number

Reverse number

Automatic Conversion

Smart pointers

slide 27

find the number of the ...

find the value of ...

B: Public virtual A } share  
 C: Run in A } one  
 ...

B: Public A } Each have their  
 C: R A }

... ..

... ..

## new and delete

keyword new: memory allocation + object construction

↳ call operator new to allocate memory (operator new does not call constructor)  
↳ invoke constructor

## Change behavior

```
class MyClass {
public:
    void * operator new (size_t);
    void operator delete (void *);
};
```

• both do not exist in this pointer and are static by default

example: need to alter exception thrown in case of std::bad\_alloc

```
void * MyClass::operator new (size_t size) {
    void * storage = malloc (size);
    if (storage == NULL) throw " ";
}
```

• If overload new, may need to overload delete too

## Placement New

```
void * C::operator new (size_t size) throw (const char*) {
    void * p = malloc (size);
    if (p == 0) throw " ";
    return p;
}
```

```
void C::delete (void * p) {
    C * p = new C;
    delete p;
}
```

```
int main {
    C * p = new C;
    delete p;
}
```

Abbildung

Abbildung  $f: A \rightarrow B$  + Abbildung  $g: B \rightarrow C$  sind komposition

(Abbildung  $h: A \rightarrow C$ )  $h = g \circ f$  wenn  $f(x) = y$  dann  $g(y) = z$

Abbildung

Abbildung  $f: A \rightarrow B$

$f(x) = y$  wenn  $x \in A$  dann  $y \in B$   
 $f(x) = y$  wenn  $x \in A$  dann  $y \in B$

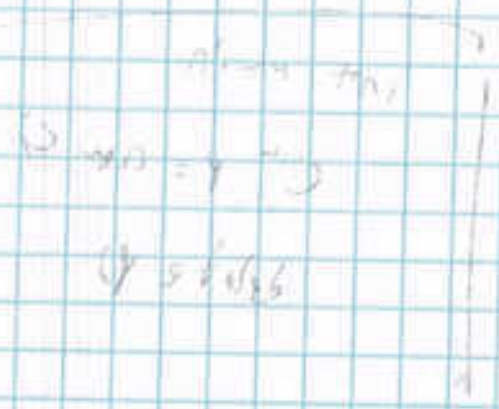
Abbildung  $f: A \rightarrow B$  ist surjektiv wenn  $B$  jedes Element  $b \in B$  hat ein  $a \in A$  mit  $f(a) = b$

$f(x) = y$  wenn  $x \in A$  dann  $y \in B$   
 $f(x) = y$  wenn  $x \in A$  dann  $y \in B$

Abbildung  $f: A \rightarrow B$  ist injektiv wenn  $A$  jedes Element  $a \in A$  hat ein  $b \in B$  mit  $f(a) = b$

Abbildung

Abbildung  $f: A \rightarrow B$  ist bijektiv wenn  $f$  surjektiv und injektiv ist

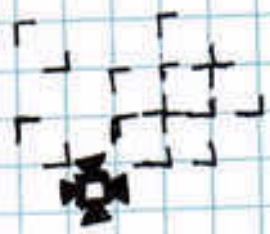


$f(x) = y$  wenn  $x \in A$  dann  $y \in B$   
 $f(x) = y$  wenn  $x \in A$  dann  $y \in B$

- English Major / music minor James Mayr
- Phil. Brian Mayr
- send link to James.

**CMS**

- old template:
  - intro of planning
    - ↳ • situation. customer define. simple words what
    - ↳ • the customer description
    - ↳ • user stories.
    - ↳ • define what is done & subjects
    - ↳ • define history - solo bank
    - ↳ • user stories



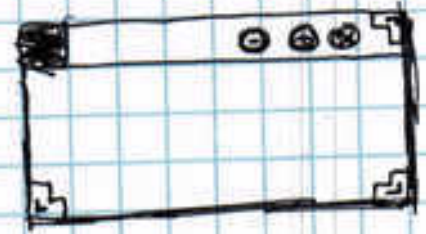
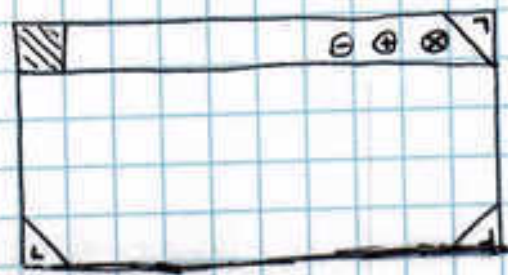
• agree content the tasks  $\Rightarrow$  Discovered in smaller box

• music website for:

www.lix.com/james mayr/music#!viewstock#  
by-compilation

war solids

→ **Realstate**



type of ...

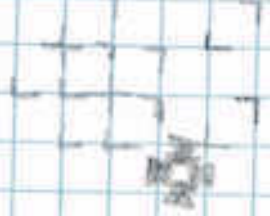
you will find ...

control unit ...

**2ND**

grandi la Surface: stolyment blo.

- ...
- ...
- ...
- ...
- ...
- ...
- ...



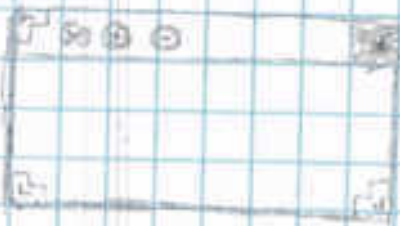
... ..

... ..

... ..

... ..

... ..





Iterator is a nested class inside

- `std::map <string, std::vector <string>>`
- `resize to bigger size` to not have cost
- vector of iterators

everything other than virtual as inline

- Global constants point to 1st & last child c
- child 2 A) pointer to the last leaf

Issue  $(0, 1) \Rightarrow 0$

Issue  $(1, 1) \Rightarrow 1$



Successive Substitution

(Kantor's algorithm, etc.) generates  
 a sequence of values for  $x$  and  $y$  such that  
 $ax + by = c$  is satisfied.

where  $a, b, c$  are integers.

2. Steps 1 & 2 are repeated until  
 a solution is found.

$$a \leq b \leq c$$

$$a \leq b \leq c$$