b) ~~virtual~~ virtual member function to be intrusive to any cast

3) non intrusive, ~~no~~ → no modify classes but in put we can use typeid to no

c) non intrusive casts → cast

Pass in pointer to the next member

Reverse ~~name~~

Automatic Conversion

Smart pointers

slide 37

B : public virtual A
C : public virtual A
} share one A

B : public A
C : public A
} each has their own

New and delete

Keyword new: memory allocation + object construction

- call operator new to allocate memory (operator new doesn't call constructor)
- invoke constructor

Changing behavior

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

- both do not require 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 == nullptr){ throw "——"; }
}
```

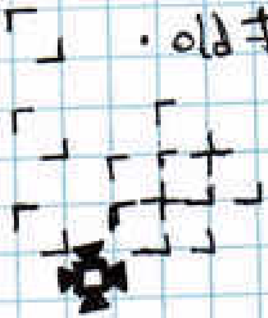
- If overload new, may need to overload delete too

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;
```

- english Major/music minor James Mayr
- Phylibian Mayr
- send link to james.
- **CMS**



- old template: • instead of planning
  - ↳ situation. customer define. simple words what
  - ↳ • the customer description
  - ↳ • user story's.
  - ↳ • define what is done & subjects
  - ↳ • define history as — solobound
  - ↳ • user story ← task task task

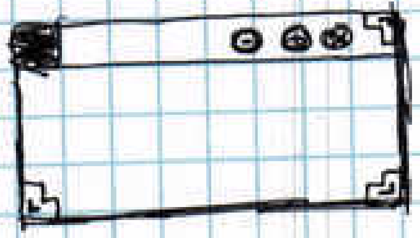
✦ user can take the tasks ← Discompose in smaller task

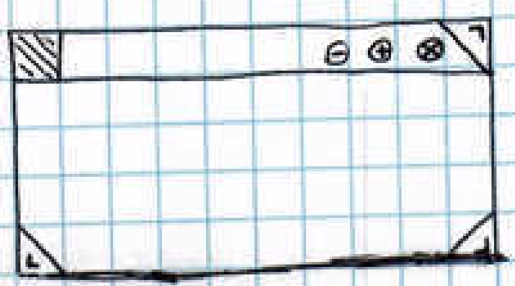
✦ music website link: ↝

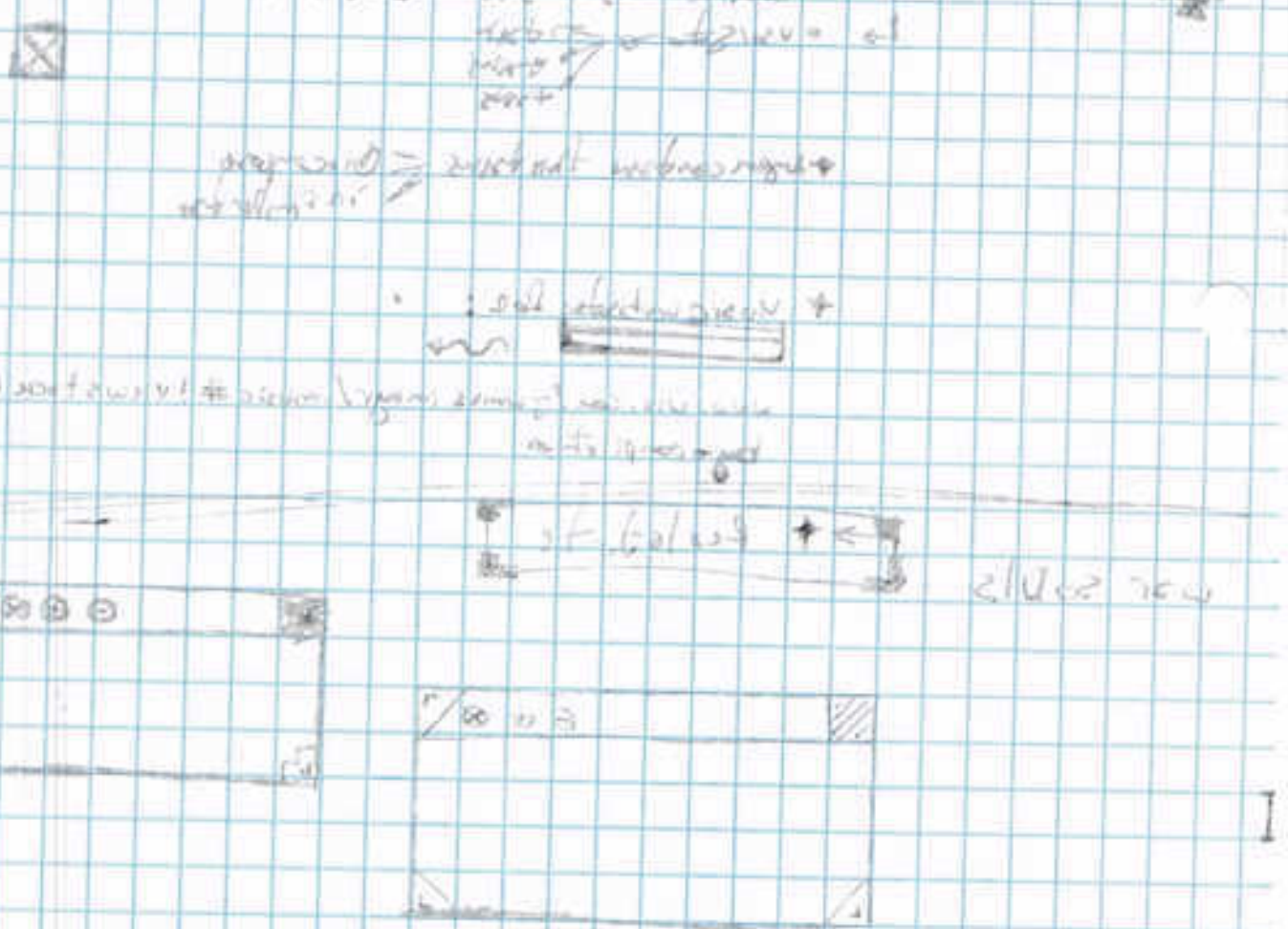
www.wix.com/jamesmayr/music#!viewstrack!=by-compilation

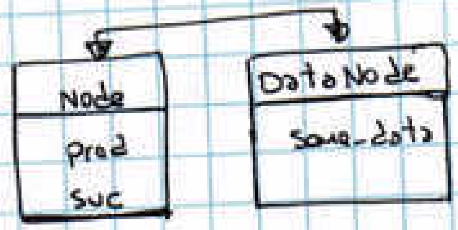
✦ Realestate

war souls









Iterator is a nested class inside

- std::map <string, std::vector <string>>
- Resize to bigger size to not have costs
- vector of iterators

everything other than virtual as inline

- Glossary containing pointer to 1st & last child
- Child () function cache last lookup

IsSame <0, 1> => 0

IsSame <1, 1> => 1