C++ SMART POINTERS

Just like a regular pointer but it automatically frees memory.
2 KINDS

- `shared_ptr`: multiple pointers can point to the same object
- `unique_ptr`: pointer “owns” object it points to.
LIKE VECTORS

- they are C++ templates. need to supply additional info in a manner similar to vectors
  - `shared_ptr<int>` `piCounter;`
  - `shared_ptr<float>` `pfFrequency;`
COMMON OPERATIONS

- `shared_ptr<T> sp;`  Null smart pointer of type T
  `unique_ptr<T> up;`

- `*p`  Dereference

- `p->x`  Synonym for `(*p).x`
make_shared<T>(args)
make_shared<int>(42);
make_shared<Rect>(2, 2, 3, 8);
p = q
```cpp
#include <iostream>
#include <memory>
using namespace std;

int main(){
    shared_ptr<int> piLife = make_shared<int>(42);
    shared_ptr<int> piLive = piLife;
    *piLive = 12;
    cout << *piLife << endl;
}
```
That’s all you need to know to get started!