ECE326 Quiz 1, Fall 2019 Student Number:

Write a move assignment operator. Student Name:

```
class Foo {
    string* ptr;
public:
    Foo (const string& str) : ptr(new string(str)) {}
    ~Foo () { delete ptr; }
    Foo (Foo&& x) : ptr(x.ptr) { x.ptr=nullptr; }
    // move assignment
    Foo& operator=(Foo&& x) {
      /* if this and x are not same object */
      if (this != &x) {
          /* delete existing (prevent memory leak) */
          delete ptr;

          /* move over x's resource to this */
          ptr = x.ptr;

          /* set x.ptr to null, otherwise when
           * x is deleted so will the content
           * that we moved over! */
          x.ptr = nullptr;
      }

      /* assignment operator returns itself */
      return *this;

    }
    const string& content() const { return *ptr; }
    Foo operator+(const Foo& rhs) {
      return Foo(content()+rhs.content());
    }
};

// in main
Foo foo ("Exam");
Foo bar = Foo("ple");   // move construction
foo = foo + bar         // move assignment
```