C ++

Inheritance

A derived class is an addition to a base class.
The attributes and functions of the base class are available in the derived class,

- Almost
  - private
  - protected
  - public

A base class X and a derived class Y

class catalog_item {
  char* title;
  char* catalog_number;
public:
  catalog_item(){title = new char[MAX];
  catalog_number = new char[MAX];
  void addtitle(char* newtitle);
  void addcatnum(char* new catnum);
  void display();
};

TTYP – derived class for book

Library Object model

Storing base and derived instances

- A pointer to a base type can point to instances of derived classes
- Virtual functions will figure “right” function to apply
- type casting can let the compiler know when you know that the type is really something else.
TTYP3 - addbook

- Write an addbook function for the library class
- Assume that library has an array of pointers to catalog-items
  - catalog-item *itemlist[MAX];

Redefining functions

- Must have the same return type
- Virtual functions
  - puts indirection in object space

TTYP4

- Write a display function for book

TTYP5

- Write a virtual display function for cat-item

TTYP6

- Write a display function for library