Classes and Their Resources

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github repository:
(https://github.com/Seneca-OOP244/SCD-Notes)

Class Resources

– sometimes an object allocates its own memory
  – ex: when fields are "collections" of items
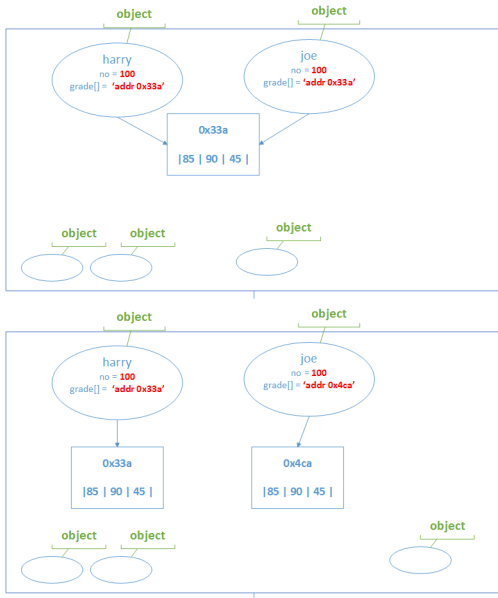
```
class Student {
    int no;

    int grade; // one grade

    int grade[8]; // fixed number of grades:8

    int *grade; // unknown number of grades
}
```

Shallow vs Deep Copy

Applicable when copying data between objects

- – shallow, copy field values directly
- – deep, allocate new memory location, copy values to new memory

Shallow vs Deep Copy

Copy Constructors

"..special constructor for copying from a current object to newly created object of the same type.."

- syntax, `ClassName(const &ClassName){ }`

- use cases
    - an object is initialized using an existing one
      `Student harry(joe);`
    - an object is passed by value to a function
    - an object returned from a function by value

- definition design
    - shallow copy of non-resource variables
    - allocates resource memory for new object
    - copies data from old to new resources