Classes – used for heterogeneous data (different data types)

Example:

Student: name, social, address, course list, GPA, grades, etc. etc.

Example:

class PersonInfo {

string firstname;

string lastname;

string address;

};

Employees: name, address, hours, rate

class Employee {

public:

PersonInfo p;

double hours;

double rate;

} ;

variable is to built-in data type as object is to class

Employee secretary, emp1; // instantiate an object of type Employee – memory is allocated for all 4 member variables for each object

DOT operator – access a member variable

secretary.name = “Alice”;

cout << “enter “ << secretary.name << “’s hours:”;

cin >> secretary.hours;

cin >> secretary.rate;

cout << “enter address: “;

getline(cin, secretary.address);

cout << secretary.name << “’s pay: “ << secretary.rate \* secretary.hours << endl;

cout << secretary;

|  |  |
| --- | --- |
| Allowed | Not Allowed |
| Assignment (=) | cout << myobject; |
| Pass an object as a parameter to a function by value | comparison |
| Pass by reference - use & (note: this is different than arrays) | cannot use mathematical operators |

class Vehicle {

public:

string make;

string model;

string year;

int mileage;

double price;

} ;

Vehicle v1, v2; // … assume these have values

if (v1 < v2) // NO

if (v1.price > v2.price) // YES

v2=v1; // YES are allowed to assign

cout << v2; // NO

cout << v1. model; // YES

LAB:

Write the bubble sort.

Write a main function that calls bubblesort at least 3 times on 3 different arrays.

Then, answer the following 2 questions:

1. What happens if I initialize swapped to false, instead of the stmt swapped=false

I write:

bool swapped=false;

1. What happens if I change the comparison to:

if (nums[pos] > nums[pos]+1)