CS180 - Lecture 6

Announcements

- Lab due Sunday @ 11:59 pm
- HW2 due Thursday @ 11:59 pm

Today
- odds & ends for C++
- larger projects

Enum: user defined types

enum Color {RED, BLUE, GREEN};
                  ↑   ↑   ↑
                  0   1   2

Color Sky = BLUE;
Color grass = GREEN;

Convention: write in all capital letters

Review : Types of Variables

① Value

② Reference

③ Pointer

Sample Code : What is Output?
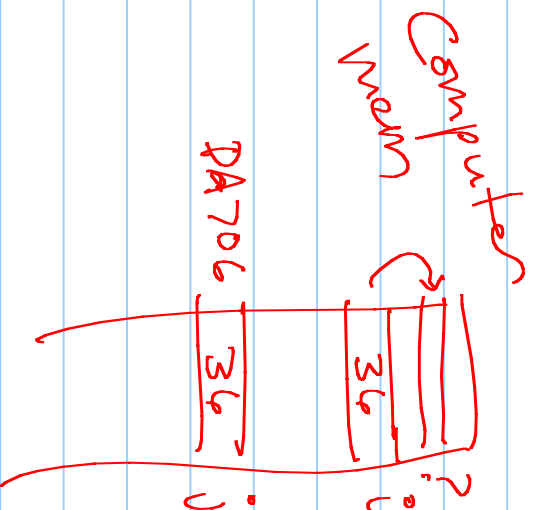
```
char ch = 'Q';        // create value variable
char* p = &ch;        // point a pointer to address of ch
cout << *p;           // print value p points to
ch = 'Z';             // reset value var. ch to Z
cout << *p;           // p still points at ch
```

Output : QZ

Caution: Common Error

```
int i;
int j[36];
```

→ $i = j$;

What is the error? ← $i = \&j$;

Computer
mem
i : hold address

DATOC | 36 | j :

causes
Segmentation fault
happen when we try
to access memory that
we don't own.

Structures:
useful for holding collections of objects

Ex:
```
enum MealType {NO-PREF, REGULAR, VEG};

struct Passenger {
    String name;
    MealType mealPref;
    bool isFreqFlyer;
    String freqFlyerNo;
}
```

Using Structures

Structures can then be used inside the program:

```
Passenger pass = {"John Smith", VEG, true, "1234"};
pass.mealPref = REGULAR;
```

Another example:

```
Passenger *p;
p = new Passenger;
p->name = "Barbara Wright";
p->mealPref = NO_PREF;
p->isFreqFlyer = false;
p->freqFlyerNo = "NONE";
```

(*p).name = "Barbara Wright";
etc.

Larger Projects:
Our Credit Card Class

Code provided for:
CreditCard.h
CreditCard.cpp
TestCard.cpp