Class 02

Variables, Primitive Types in C++, Input Instructions

Review – Structure of a C++ Program

Standard Beginning

    Our Commands

Standard Signoff

Standard Beginning

```
#include<iostream>
using namespace std;
int main(){
```

Our Commands

```
   // body of the program
```

Standard Signoff

```
   return 0;
}
```

Whitespace and Comments

- Whitespace includes things like spaces, lines separating text, and indentation

- Comments also help with keeping code easy to understand by humans

- Single line comments begin with //

- Multi-line comments begin with /* and end with */

Output

- cout (character output)
  - Used to print content to the monitor
- endl (end of line)
  - can be used in cout statements to start text following it on a new line

Computer Memory

- Computer memory is essential a series of boxes, each identified by an address or label

- In the picture below, PriceOfShoes is a variable name associated with a location in memory where the value 19.95 is stored
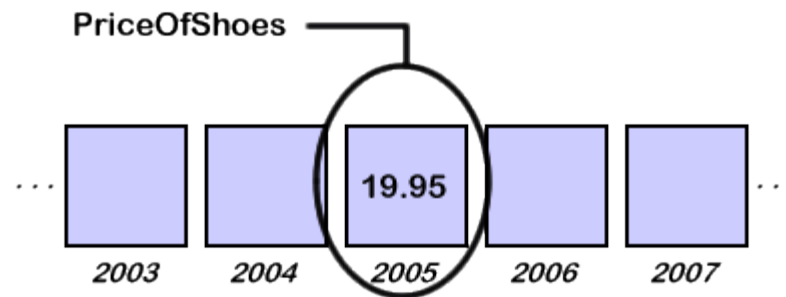
Variables

- Variables are used to store data in these boxes in memory
- Every variable needs a DATA TYPE and a NAME
- Variable names must conform to the following rules:
  - May only contain numbers, letters and underscores
  - Cannot begin with a number
  - Cannot be a C++ keyword

- Purely for reference, the list of C++ keywords is here: https://en.cppreference.com/w/cpp/keyword

Primitive Data Types

- The computer needs to be told what type of data to store in memory

- Primitive types include:
    - Integer (int)
    - Double (double)
    - String (string)
    - Character (char)
    - Boolean (bool)

Declaring Variables

- Before we use a variable, we must declare it

- Model

  TYPE NAME

- Example:

  int years;
  double length;
  string catName;
  char letter;
  bool isTrue;