

# 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

```
// stuff
```

## Standard Signoff

```
    return 0;  
}
```

# Whitespace and Comments

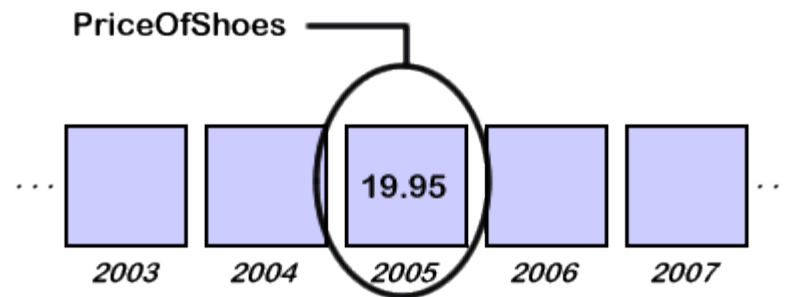
- Whitespace includes things like spaces, lines separating text, and indentation
- Comments also help with keeping code easy to understand by humans
- Single line comments begin with `//`
- Multi-line comments begin with `/*` and end with `*/`

# Output

- `cout`
  - Used to print content to the monitor
- `endl`
  - can be used in `cout` statements to start text following it on a new line

# Computer Memory

- Computer memory is essentially 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;