Class 02

Variables, Primitive Types in C++, Input Instructions
Review – Structure of a C++ Program

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

Image source: https://courses.cs.vt.edu/~csonline/ProgrammingLanguages/Lessons/Identifiers/index.html
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;