INFO1103 Notes

Contents

Lecture 1.2 – Programming Basics

- A program is a set of instructions for a computer such that it can understand and execute it
- Programs have to be written in a special format that obeys the syntax of the programming language you are using.
    - Once the text file is written, a compiler is used to turn the file into something a computer can read and run.
- Some major languages include C, C++, C#, VisualBasic, Java, Python, Pascal
- Java syntax includes:
    - Reserved words such as: public, static, float, void
        - Cannot use these for variables
    - Variable names cant begin with numbers
    - Blocks of code are delineated with braces { }
    - Expressions are delineated with parentheses ( )
    - Array items are access with brackets [ ]
    - Statements end with semi-colons ;
    - Strings are limited by double quotes " "

Lecture 2.1 – Variables and Expressions

- Everything is stored as bytes
    - Each byte is eight bits
- Hexadecimal is a more compact way to store numbers in a range that's a power of two
    - $2^4 = 16$, ranges from 0-F
    - To indicate a number is interpreted this way, we put 0x in front: 0x00 – 0xFF
- Variables are pieces of information that's stored in memory that is accessible via a given name
    - Primitive types are the simplest types of variables (int), which use a fixed amount of memory. They can be changed through the use of math operations
        - Includes boolean, byte, short, int, long, float, double, char
            - Boolean = true/false (default false)
            - Char = single character (represent with ' ')
                - Java uses 16 bits per character to accommodate characters from other languages.
            - Byte, int, short, long = store integer values
            - Float, double = store decimal places
                - Double is more accurate, uses twice as many bits
    - Objects are customised type of variables (string).
        - Includes string