

Lecture 2: Variables and Data Types

Curtin FIRST Robotics Club (FRC) Pre-season Training

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October 19, 2016

Curtin University

Insert Mandatory Programming Joke



1. Data Types
2. Variables
3. Arithmetic Operators
4. Misc

Data Types

A C++ identifier is a name used to identify a variable, function, class, module, or any other user-defined item.

An identifier starts with a letter A to Z or a to z or an underscore (_) followed by zero or more letters, underscores, and digits (0 to 9).

C++ does not allow punctuation characters such as , \$, and % within identifiers. C++ is a case-sensitive programming language. Thus, Manpower and manpower are two different identifiers in C++.

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Variables

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Arithmetic Operators

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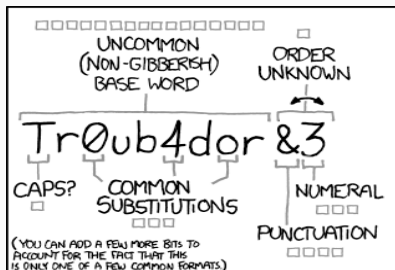
Misc

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Check this out



~ 28 BITS OF ENTROPY

$2^{28} = 3 \text{ DAYS AT } 1000 \text{ GUESSES/SEC}$

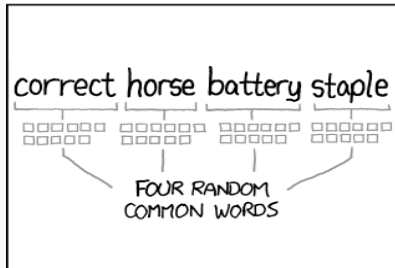
(PLAUSIBLE ATTACK ON A WEAK REMOTE WEB SERVICE. YES, CRACKING A STOLEN HASH IS FASTER, BUT IT'S NOT WHAT THE AVERAGE USER SHOULD WORRY ABOUT.)

DIFFICULTY TO GUESS: **EASY**

WAS IT TROMBONE? NO, TROUBADOR. AND ONE OF THE 0s WAS A ZERO?

AND THERE WAS SOME SYMBOL...

DIFFICULTY TO REMEMBER: **HARD**



~ 44 BITS OF ENTROPY

$2^{44} = 530 \text{ YEARS AT } 1000 \text{ GUESSES/SEC}$

DIFFICULTY TO GUESS: **HARD**

THAT'S A BATTERY STAPLE.

CORRECT!

DIFFICULTY TO REMEMBER: YOU'VE ALREADY MEMORIZED IT

THROUGH 20 YEARS OF EFFORT, WE'VE SUCCESSFULLY TRAINED EVERYONE TO USE PASSWORDS THAT ARE HARD FOR HUMANS TO REMEMBER, BUT EASY FOR COMPUTERS TO GUESS.

