Part 4

Integrating Bootstrap in Web Design, Javascript and PHP (Variable, Data Types, Operators, Conditions, Looping)

Topics to Learn

- Variables
- Data Types
- Operators
- Conditional Statements
- Looping Statements
- What is Bootstrap ?
- What is Framework (in programming) ?

Variable

Computers understand numbers, not words. 0s and 1s. But 0s and 1s are difficult for people.

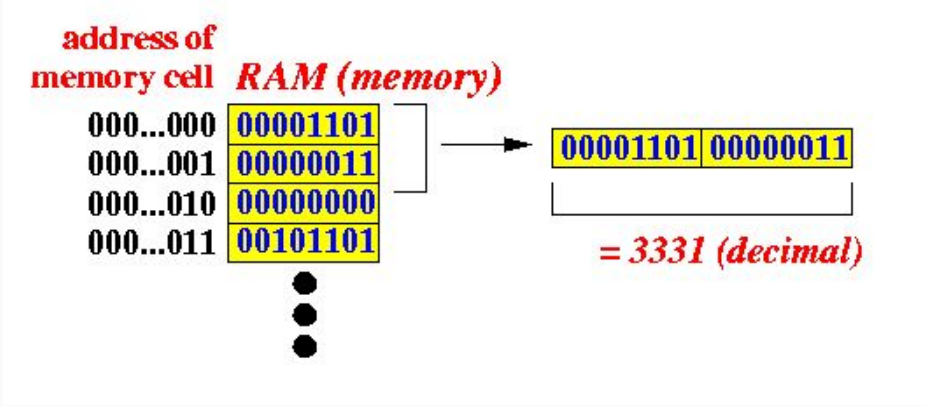
High-level programming languages allow people to use symbolic names instead of just 0s and 1s.

A computer's memory is a contiguous sequence of slots, or memory cells. Data can be stored in memory cells. Each cell has a numeric Address.

A variable is the name of a memory cell.

https://www.cs.usfca.edu/~wolber/courses/110/lectures/variables.pdf

https://www.cs.utah.edu/~germain/PPS/Topics/memory_layout.html



Variable

Programming languages provide ways to abstract the use of memory, and one way is to provide names to describe a memory location.

The names that we choose are translated to memory addresses on some level by the language translator, such as a compiler, an assembler, or interpreter.

If you take the time to learn a little bit of assembler language, you will be able to see very clearly how memory addresses are assigned with symbolic names. It's all part of allowing the programmer to think about the problem in terms of the problem domain, and less is terms of the computer architecture.

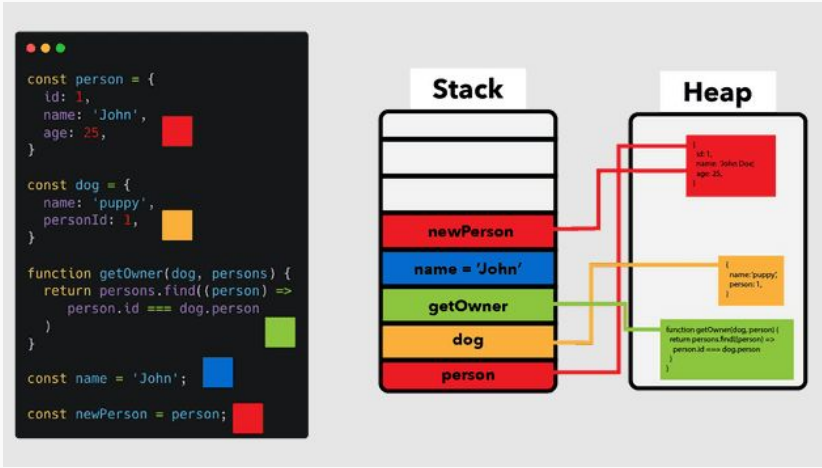
https://www.quora.com/Whats-the-difference-between-a-variable-and-a-memory-location

Variable

RAM memory stores the values of variables .

Random Access Memory is where the computer stores temporary data during program execution. Integers require 2-bytes or 16 bits of storage each. ... These numbers are known as memory addresses. A variable reserves one or more addresses in which a binary value is stored.

Variables are usually stored in RAM. This is either on the heap (e.g. all global variables will usually go there) or on the stack (all variables declared within a method/function usually go there). Stack and Heap are both RAM, just different locations. Pointers have different rules.



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Key Difference Between Stack and Heap Memory

- Stack is a linear data structure whereas Heap is a hierarchical data structure.
- Stack memory will never become fragmented whereas Heap memory can become fragmented as blocks of memory are first allocated and then freed.
- Stack accesses local variables only while Heap allows you to access variables globally.
- Stack variables can’t be resized whereas Heap variables can be resized.
- Stack memory is allocated in a contiguous block whereas Heap memory is allocated in any random order.
- Stack doesn’t require to de-allocate variables whereas in Heap de-allocation is needed.
- Stack allocation and deallocation are done by compiler instructions whereas Heap allocation and deallocation is done by the programmer.

Javascript Memory Management

Javascript Memory Management
https://felixgerschau.com/javascript-memory-management/

How Javascript works in browser?
https://felixgerschau.com/javascript-event-loop-call-stack/

Javascript Visualizer
https://www.jsv9000.app/

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How to achieve?

- Passion
- **Practise (Keep on Coding)**
- Patience
- Persistence (Learn from failures)