

Common Programming Constructs

a review of lessons learned so far... (2 steps forward - 1 step back)

- ✓ **Software Development Cycle:** design, implement, test, debug, document
- ✓ **Large Problems are broken down into smaller modules** to be solved using flowcharting or pseudo-code, then coded, & re-assembled to solve the complete problem.
- ✓ High-level languages require a **compiler** to translate source code into machine code (or byte code in the case of Java).
- ✓ Program command execution is **linear**, thus, programming statements must be written in order (linear) as well.
- ✓ Programming languages contain **keywords/reserved words** that can only be used as their intended purpose as determined by the language.
- ✓ Languages utilize a specific **syntax & punctuation**.
- ✓ **Primitive data types** are “built in” to the language, and allow for data storage & retrieval.
- ✓ **Storage space must be allocated for data, before it can be used to store data.**
- ✓ Programming languages allow for **user defined “identifiers”** of storage space (variables & constants), methods, and classes (in object-oriented languages like Java).
- ✓ The API extends/expands the language with a **library** of classes/methods for common programming tasks.
- ✓ Common Mathematical Operators are: **+, -, *, /, %, & - (unary minus)**.
- ✓ Mathematical Expressions are processed with **operator precedence & associativity**.
- ✓ Programmers use **comments** to note explanation of coding methods & identifier purposes for future reference.
- ✓ Good Programming Practice is to **write “readable by humans” code** (indent, ws, comments).