C++ envrionment setup: use eclips and use compiler MinGW www.mingw.org

While installing MinGW, at a minimum, you must install gcc-core, gcc-g++, binutils, and the MinGW runtime, but you may wish to install more.

Add the bin subdirectory of your MinGW installation to your PATH environment variable so that you can specify these tools on the command line by their simple names.

Object: objects have states and behaviors. E.g. dog has states color, name, breed as well as behaviors wagging, barking, eating. An object is instance of a class.

Class: template of a behaviors/states that its object support.

Methods: A method is basically a behavior, a class can contain many methods where the logics are written, data is manipulated and all the actions are executed.

Instance Variables: Each object has its unique set of instance variables. An object state is created by the values assigned to these instance variables.

Lvalue: Expression that refer to a memory location is called “lvalue” expression, an lvalue may appear as either the left-hand or right-hand side of assignment.

Rvalue: the term rvalue refers to a data value that is stored at some address in memory. An r value is an expression that cannot have a value assigned to it which means an rvalue may appear on the right but not on left-hand side. 10 = c; is not allowed.

To output something on screen c used to use %d, %f cpp does not need that.

When we do the #define, no memory is allocated it is just a text replacement for var in compilation phase.

Const can not be changed by your program during execution.

Volatile: variable value may be changed in ways not explicitly specified by the program.

Restrict: a pointer qualified by restric is initially the only means by which the object it points to can be accessed. Only C99 adds new type.

Storage class: defines the scope/visibility and lifetime of a variable and or functions within a C++ program. These specifiers precede the type that they modify.

Auto: all local variables are auto by defult

Register: request to store variable is register instead of RAM. Maximum size would be of register size, and can’t have the unary ‘&’ operator applied to it.

Static: instructs compiler to keep a local variable in existence during the lifetime of the program instead of creating and destroying it each time it comes and goes out of scope. Therefor making local variables static allows them to maintain their values between function calls. Static applied to global variables limits the scope of the variable to the file in which it is declared. In C++ when static is used on a class data member it causes only one copy of that member to be shared by all objects in the class.

Extern: extern is used to declare a global variable or function in another file.

Mutable: The mutable specifier applies only to class objects. It allows a member of an object to override const member function. That is, a mutable member can be modified by a const member function.

Till: <https://www.tutorialspoint.com/cplusplus/cpp_operators.htm>