Bonus Day 1 Object Oriented Programming Languages

object- independent and reusable section of software code that can perform a specific task and store specified dta related to that task

can also use procedures but emphasize the practice of objects

Object Oriented Constructs

implementation of these features makes a language object oriented:

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1. polymorphism
2. encapsulation
3. inheritance
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reuse could be considered fourth- but if implement the 3 key features, reuse automatic

polymorphism- program is able to adapt automatically

ex: listing with 2 functions with same name draw circle 2 sets of inputs- based on inputs program chooses which version to use

encapsulation- create objects that are self-contained. black boxes- user does not need to know how they work just how to use them

if change parameter, function will still work across programs

objects will store input

inheritance- capability to create new objects that expand the characterisitics of existing objects

ex: having an object that draws a square, then creating an object that draws a cube by INHERITING some functionality from the square object

most common types of programs created with C++:

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1. executables- run by OS
2. libraries- routines created to link to other programs being created
3. dynamic linked libraries- reside in memory and be linked to other programs at runtime
4. controls- routines created that can be used in the creation of other programs
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The Java Programming Language

Java more inflexible than C to remove complexity, add portability. Java REQUIRES use object oriented concepts- C++ optional

java applets or applications not translated all the way to machine code- intermediate step called **bytecode** allows for transfer to different architectures where each one has its own **interpreter called a Java Virtual Machine**

java adds packages also called **class libraries** to streamline and simplify reuse of classes (objects)

each package defines a separate namespace and a class name needs to be unique within its own namespace

application full fledged program designed to run on its own

applet- designed to be distributed over the internet and executed in a browser

comprehensive set of libraries to perform functions such as screen display, networkig, internet access etc.