Assignment 15 – read & discuss one major topic in 2-3 paragraphs

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I contend that in any introductory programming class, you must teach the following fundamental software design concepts:

* Variables
* Data Structures
* If Statements
* Loops
* Classes/Objects
* Encapsulation
* Composition
* Inheritance
* Polymorphism
* Early 1960’s 🡪 **Simula-67** introduced the concept of an object

Simula was created to aid in simulations

- the initial version of the language, **Simula-1**, was introduced in 1966

* Many consider the First Truly O-O Language was **Smalltalk**

- developed at the Learning Research Group at Xerox's Palo Alto Research Center in the early 1970s

- w/in Smalltalk 🡪 everything is really an object that enforces the O-O paradigm

- virtually impossible to write a program in Smalltalk that is not O-O.

- not the case for other languages that support objects like: C++ and Visual Basic (& Java, for that matter)

C++:

* C++ has its roots in a project to simulate software running on a distributed system
* When the initial simulator written in Simula failed, Stroustrup decided to rewrite it in a C predecessor called BCPL
* C++ was originally implemented in 1982 under the name C with Classes. As the name suggests, the most important concept of C with Classes was the addition of the class. The class concept provided the encapsulation now requisite with O-O languages.

Java:

* Origins are in consumer electronics
* 1991 🡪 Sun Microsystems began to investigate how it might exploit this growing market
* James Gosling was investigating the possibility of creating a hardware-independent software platform for just this purpose
* By fall 1995, Java beta 1 was released, and the Netscape Navigator 2.0 browser incorporated Java. Java 1.0 was officially released in January 1996. Over the past several years, Java has progressed to the current release Java 2 Platform Standard Edition 6.0 as well as other platforms such as an Enterprise Edition (J2EE) for the enterprise/server market and a Micro Edition (J2ME) for mobile and wireless.

.NET:

* Microsoft initially responded to the popularity of Java by producing a version of Java called Visual J++. However, Microsoft decided on a more comprehensive response. Using many of the groundbreaking concepts that Java implemented, Microsoft developed a language called C# that became the foundation for the company's .NET platform. As with Java, C# relied heavily on the success and failures of earlier languages.
* The .NET development environment includes many of the really good characteristics of several other platforms. .NET incorporates many of concepts introduced by the initial Java release. The .NET platform also builds upon many of the powerful features of the VB6 and Visual C++ environments.
* Visual Basic 6 was one of the most popular programming languages. The programming environment for VB6 has had a huge impact on state-of-the-art development environments. VB6 has evolved steadily towards the object-oriented model until it finally joined the list of object-oriented languages with the release of Visual Basic .NET. VB6 was not totally object-oriented; it did not implement inheritance completely.