**Differences**

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| Object Oriented  Object-oriented programming (OOP) refers to a type of computer programming (software design) in which programmers define the data type of a data structure, and also the types of operations (functions) that can be applied to the data structure.  The four principles of object-oriented programming are encapsulation, abstraction, inheritance, and polymorphism. | Object Based  The term "object-based language" may be used in a technical sense to describe any programming language that uses the idea of encapsulating state and operations inside "objects". Object-based languages need not support inheritance or subtyping, but those that do are also said to be "object-oriented"  Object-based languages don't support all the features of OOPs like polymorphism or inheritance. |
| Compiler  A compiler takes entire program and converts it into object code which is typically stored in a file. The object code is also refereed as binary code and can be directly executed by the machine after linking. Examples of compiled programming languages are C and C++. | Interpreter  An Interpreter directly executes instructions written in a programming or scripting language without previously converting them to an object code or machine code. Examples of interpreted languages are Perl, Python and Matlab. |
| Encapsulation  Encapsulation is defined as the wrapping up of data under a single unit. It is the mechanism that binds together code and the data it manipulates. Another way to think about encapsulation is, it is a protective shield that prevents the data from being accessed by the code outside this shield. | Abstraction  Data Abstraction is the property by virtue of which only the essential details are displayed to the user. The trivial or the non-essentials units are not displayed to the user.  Data Abstraction may also be defined as the process of identifying only the required characteristics of an object ignoring the irrelevant details. The properties and behaviours of an object differentiate it from other objects of similar type and also help in classifying/grouping the objects. |

**Binary Number System**

In mathematics and digital electronics, a binary number is a number expressed in the base-2 numeral system or binary numeral system, which uses only two symbols: typically "0" (zero) and "1" (one). The base-2 numeral system is a positional notation with a radix of 2. Each digit is referred to as a bit.

**Octal Number System**

The octal numeral system, or oct for short, is the base-8 number system, and uses the digits 0 to 7. Octal numerals can be made from binary numerals by grouping consecutive binary digits into groups of three (starting from the right). For example, the binary representation for decimal 74 is 1001010.

**Decimal Number System**

Decimal, also called Hindu-Arabic, or Arabic, number system, in mathematics, positional numeral system employing 10 as the base and requiring 10 different numerals, the digits 0, 1, 2, 3, 4, 5, 6, 7, 8, 9. It also requires a dot (decimal point) to represent decimal fractions.

**Hexadecimal Number System**

The hexadecimal numeral system, often shortened to "hex", is a numeral system made up of 16 symbols (base 16). The standard numeral system is called decimal (base 10) and uses ten symbols: 0,1,2,3,4,5,6,7,8,9. Hexadecimal uses the decimal numbers and six extra symbols.

**Why there are 360 degrees in a circle**

The Babylonians knew about equilateral triangles. And they knew that if you arranged 6 of these equilateral triangles in a certain way with the edge of one aligned on top of the edge of the next, the last one would end up meeting back up with the first. In other words, the total angle formed by 6 of these equilateral triangles would be the same as the angle around a circle. Given the Babylonian usage of 60 as their number base, they decided that each of the angles of an equilateral triangle would be 60 degrees. And thus, when you multiply these 60 degrees by the 6 equilateral triangles that combine to create a sort of circle, you get 6 x 60 = 360 degrees. And thus, 360 degrees in a circle.

**Why the number 12 appears to be a standard number**

Twelve is the smallest abundant number, since it is the smallest integer for which the sum of its proper divisors (1 + 2 + 3 + 4 + 6 = 16) is greater than itself. Twelve is a sublime number, a number that has a perfect number of divisors, and the sum of its divisors is also a perfect number.