DIGITAL WORLD
@TOYNBEE

7.5 Programming 2

This unit begins right where 'Programming I' left off. You will build on your understanding of the control structures' sequence, selection, and iteration (the big three), and develop their problem-solving skills.

Boolean logic:

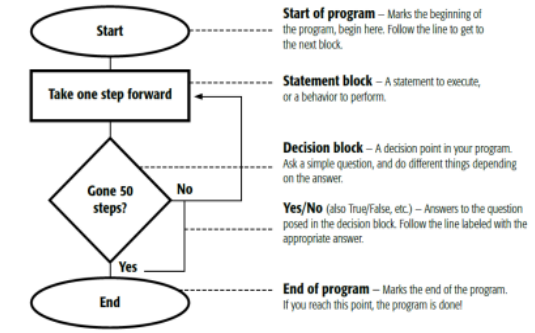
Boolean logic is a type of algebra used in computing. The answer can only be true or false.

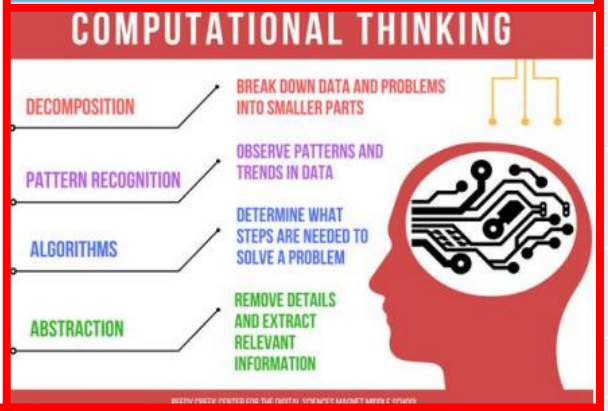
Understanding Boolean terms:

Expression:	Boolean term:
Equals	=
Greater than	>
Less than	<
Greater than or equal to	>=
Less than or equal to	<=
Does not equal	<>
And	AND
Or	OR
Not	NOT

Flowcharts

We use flowcharts to help us put instructions in order.





Count-controlled iteration - code inside the block repeats a set number of times

Condition-controlled iteration - code inside the block repeats until the condition is met (true)

Infinite iteration - repeats the code inside the block until the program is stopped by the user

Sequence	One of the three basic programming constructs. Instructions that are carried one after the other in order.
Selection	One of the three basic programming constructs. Instructions that can evaluate a Boolean expression and branch off to one or more alternative paths.
Iteration	One of the three basic programming constructs. A selection of code that can be repeated either a set number of times (count-controlled) or a variable number of times based on the evaluation of a Boolean expression (condition-controlled).
Variable	A value that can change depending on conditions or information passed to the program.
Boolean expression	An algebraic expression which has a Boolean value
Comparison operator	Used to compare two expressions
Computer bug	Code that causes your computer to behave in an unexpected way
Resilience	The capacity to recover quickly from difficulties
Subroutine	A block of code within a program that is given a unique, identifiable name. Supports code reuse and good programming technique.
Decomposition	Breaking down a problem into smaller, more manageable parts in order to make the problem easier to solve
List	A data structure that allows multiple pieces of data under a single name
Data structure	A way or organising and managing data in a programming language that ideally enables efficient access and modification of the data