**Module 1 Aspect of Language**

Computers are machines, how do we capture instructions (recipe) in a mechanical process for the computer to execute. There are two ways to represent this.

**Fixed program computer** – A calculator will only perform the functions that are preprogrammed on it ahead of time.

**Stored program computer** – The machine stores and executes procedures using an “interpreter”.

**PARTS OF THE COMPUTER - Basic Machine Architecture**

**Memory** – **Control Unit** and **Arithmetic logic Unit (ALU)**

Turing says you can compute anything using 6 primitives; move left, move right, scan, read, write, do nothing.

In some languages it is going to be easier to do some things than the other, nonetheless, anything you can compute in one language, you can compute in another language, this is known as Turing complete.

**Aspects of Language**

Every language has its basic structure, a programming language provides a set of primitive operations. Primitive constructs (think of it as English words) simple operations provided by the manufacturer and are used to create expressions. Expressions are complex but legal combinations of the primitive in a programming language. Expressions and computations have values and meanings in a programming language.

Numbers, Strings, None, Boolean

Simple operations provided by the manufacturer.

**Syntax** - Determines whether a string is legal.

**Static semantics** - Determines whether a string has meaning.

**Semantics** - Assigns a meaning to a legal sentence (this may not be the meaning we intended or had in mind)

Learn syntax and semantics in this programming language.