**Data Structures**

An arrangement of data in a computer’s memory or sometimes on a disk

Ex: Stacks, Queues, LinkedList, Trees

Usage:

* Real world data storage
* Real world modeling
  + Queue can model customers waiting in line
  + Graphs can represent airline routes between cities
* Programmers Tools
* Stacks, queues are used to facilitate some other operations

**Algorithms**

* Manipulate the data in the data structures in various ways
* Well-defined computational procedure that takes some value or set of values as input and produce some value or set of values as output
* An algorithm should be
  + Correct, ambiguous, give the correct solution for all cases, simple, terminate

Ex: Searching and sorting algorithms

**Lecture 1** –Stack

Allows access to lastly inserted item

Application of Stacks

* String reverse
* Page visited history in web browser
* Undo sequence of text editor
* Recursive function calling
* Auxiliary data structure for algorithms
* Stack in memory for a process