Elementary Data Structures

Abstract data type = Data structure + Methods on the structure

Building blocks

- Types – Set of bits to be used to represent data
- Functions – Operations to manipulate on the data
  
  **Data type**. Set of values and a collection of operations on those values.

Arrays

- Most fundamental data structure
- Direct correspondence to the computer memory
- Sieve of Eratosthenes

  // Initialize the array of N elements
  
  for i in 1 to N
      a[i] = prime;

  // Perform a nested loop to mark the non-prime elements

  for i in 2 to N
      if a[i] is prime
          for j in i to N / i
              a[j*i] = non_prime;

  // All the primes are now left marked as such

The rest of Chapter 3 and Chapter 4 are reading assignment. You will be responsible for the same on the second test.