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.