**Feb 22, 2021**

**Main Purposes of Questions:**

1. **Writing the code**
2. **Reading the code**
3. **Data structures**
4. **Unix**
5. **Software engineering**

**Strategy for Preparation:**

1. **Understand the codes in all the labs and assignments**
2. **Understand the codes in the lecture notes**
3. **Real lecture notes**

**Major topics:**

1. **Unix**

**Tree structure**

**Path: absolute and relative**

**File access**

**Pipe and Redirect**

**Some important commands**

1. **Software Engineering**

**UML, testing, development cycle**

1. **C++**

**Bitwise operators**

**Struct and Array**

**Class**

**Constructors: default, parameterized, copy**

**Overload operators**

**I/O:**

**Cout << // computer screen**

**Cin >> // get input from keyboard**

**#include <fstream> // a class for file stream**

**Control:**

**Within a loop, we may encounter ‘break’ or ‘continue’**

**Function:**

**Pass-by-value and pass-by-reference**

**Debugging:**

**Assert function: to impose logical conditions (precondition and postconditions)**

**Array:**

**How to traverse all the elements of 2-d arrays?**

**List:**

**Unsorted list**

**Add or delete one item**

**Inheritance:**

**Protected vs private**

**Syntax for inheritance**

**Friend:**

**Class B**

**{**

**Public:**

**friend class A; // A is a friend of B**

**// it does not mean B is a friend of A**

**}**

1. **Data Structure**

**Unsorted List: linear search: O(n), where n is the number of elements in the list.**