Part 1

Representing Data, Information, Knowledge
How is information represented inside the Computer?
Encoding
   Encoding Text
   # ASCII Code
   # UNICODE Code
Encoding Numbers:
Number Systems
   # Decimal (Base 10)
   # Binary (Base 2)
   # Octal (Base 8)
   # Hexadecimal (Base 16)
Different Ways of Representing Binary Numbers:
   - Unsigned Integers
   - Signed Magnitude
   - 1’s Complement
   - 2’s Complement
Binary Arithmetic (Using 2’ complement)
Overflow in 2’s Complement
Overflow in Unsigned Integers
Adding Negative Numbers
Encoding Images
Encoding Sound
Encoding Video
What is Data?
What is Information?
What is Knowledge?

Part 2:

Data Structures
Memory
Arrays (1D, 2D, 3D, etc.)
Linked List
Stacks
Queues
Doubly Linked List
Recursion
Binary Trees