21 Lecture - CS201

Important Subjective

1. What is bit manipulation?

Answer: Bit manipulation is a programming technique used to manipulate individual bits or groups of bits within a binary sequence using logical and arithmetic operations.

2. What are the benefits of using bit manipulation?

Answer: Using bit manipulation can help to optimize code, reduce memory usage, and improve performance in certain cases.

3. What is the difference between bit-wise AND and bit-wise OR?

Answer: Bit-wise AND returns 1 only if both bits being compared are 1, while bit-wise OR returns 1 if either bit being compared is 1.

4. What is bit-wise complement?

Answer: Bit-wise complement is a unary operator that inverts all the bits of a given value.

5. What is the difference between left shift and right shift operations?

Answer: Left shift moves the bits of a value to the left by a specified number of positions, while right shift moves the bits to the right.

6. What is a bitmask?

Answer: A bitmask is a binary sequence used to perform bitwise operations on a set of values.

7. How can bit manipulation be used in encryption?

Answer: Bit manipulation can be used to encrypt data by performing logical and arithmetic operations on the binary values of the data.

8. What are the risks associated with bit manipulation?

Answer: Bit manipulation can be error-prone and difficult to debug, and it can also lead to security vulnerabilities if not implemented properly.

9. What is a flag variable?

Answer: A flag variable is a binary value used to represent a particular condition or state, and it can be manipulated using bit-wise operations.

10. How can bit manipulation be used in optimizing code?

Answer: Bit manipulation can be used to replace complex arithmetic operations with simpler bitwise operations, reducing the number of instructions and improving performance.