

Some Geek Terms

KochiTechGroup

What is a Factorial?

- $N! = N * (N-1) * (N-2) \dots 3 \times 2 \times 1$ (For all $N > 0$)
- Recursive Factorial
- Why Factorial computation of large numbers does not scale
- Uses of Factorial Computation
- Permutations, Combinations and Binomial Theorem
- Approximating Factorial (Stirling's Approximation)
- Tail Call Optimization and Linear Recursion
- Why do we do Tail Call Optimization?

Fibonacci Number

- Historical tidbits and Connection to Galileo Galilei
- Iterative Computation of Fibonacci
- Recursive Fibonacci and How it differs from Recursive Factorial?
- Golden Ratio and Aesthetics
- Quintessential Dynamic Programming example
- Memoization and Code as Data Idiom
- Data as Code vs Code as Data
- Why Trigonometric functions cannot be precomputed?
- Memoization vs Caching

Cryptographic Terms

- Substitution Ciphers, Transposition Ciphers
- Symmetric Key Algorithms
- Asymmetric Key Algorithms
- Hashing Algorithms
- Digital Signature Algorithm
- Base64, UUENCODE algorithms
- BigInteger Computations

Data Compression Terms

- Shannon Fano Encoding
- Huffman Encoding
- Lossy Compression vs Loseless Compression
- Character Encoding vs Block Encoding
- Loserless Compression (DCT and DWT)
- Run Length Encoding
- Context Specific Data Encoding for Compression
- Entropy – Why we cannot repeatedly compress ?

Questions

- If any!