**Weekly Topics**

**(Subject: Advanced Algorithms and Problem Solving (AAPS))**

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| **Week** | **Lab** |
| 1 | * [Compute XOR from 1 to n (direct method)](https://www.geeksforgeeks.org/bits-manipulation-important-tactics/#xor) * [Count of numbers (x) smaller than or equal to n such that n+x = n^x](https://www.geeksforgeeks.org/bits-manipulation-important-tactics/#count) * [How to know if a number is a power of 2?](https://www.geeksforgeeks.org/bits-manipulation-important-tactics/#powerof2) * [Find XOR of all subsets of a set](https://www.geeksforgeeks.org/bits-manipulation-important-tactics/#xorsubset) * [Find the number of leading, trailing zeroes and number of 1’s](https://www.geeksforgeeks.org/bits-manipulation-important-tactics/#leadtrail0) * [Convert binary code directly into an integer in C++](https://www.geeksforgeeks.org/bits-manipulation-important-tactics/#bintodig) * [The Quickest way to swap two numbers](https://www.geeksforgeeks.org/bits-manipulation-important-tactics/#quickswap) * [Simple approach to flip the bits of a number](https://www.geeksforgeeks.org/bits-manipulation-important-tactics/#flipbit) * [Finding the most significant set bit (MSB)](https://www.geeksforgeeks.org/bits-manipulation-important-tactics/#msb) * [Check if a number has bits in an alternate pattern](https://www.geeksforgeeks.org/bits-manipulation-important-tactics/#alternatebit)   (Ask students to perform in labs and remaining as homework.) The solution can be reached by Ctrl+click on each program. |