**PROGRAMS**

**Program for Binary to Decimal Conversion**

* **Auxiliary space:** Temporary space taken by an algorithm to run.

**Left shift (1<<n) = 1\*pow(2,n)**

* Using **string** for input **is better** as integers have size constraints.
* Includes many methods with time complexity as **n** and **log(n)**.
* Time complexity is **n** where each integer digit or string character is checked and evaluated.
* Time complexity is **log(n)** where unrequired checking for digit holding value of **0** is skipped.

**Program for Decimal to Binary Conversion**

* Even dividing the input continuously results in time complexity becoming **log(n)**.
* Bitwise operators work **faster** than arithmetic operators.
* Left shifting is multiplying, whereas right shifting is division.
* Right shifting operations for 32-bit binary will give **O(1)** time complexity.

**Program for Hexadecimal to Decimal**



* A header file containing stoi() method.
* stoi() is used for creating your own number system.

