This program is the implementation of two permutation generation algorithms, namely backtracking algorithm and Heap's algorithm. For practice purpose, I use Singleton and Observer pattern to implement and organize the algorithms.

The program generates and outputs the permutation of numbers 1 to n (1 <= n && n <= 9).

The class *Subject* accepts an input as string and checks its legitimacy. If the input is valid, Subject notifies the classes *BTrackingObserver* and *HeapObserver* to generate the permutations and write outputs into local files.

The flow of the program is shown in the graph below.