Assignment 3 - Q3 Report

First, input the symptoms in binary using bitset data type and convert the binary to decimal.
The same input method was used for medicine and its side effects.
The number of possible states of the person considering every combination of symptoms will be 2^n
Then, I stored the information on medicine in a vector.
First, I thought of creating an adjacency list and every node using all possible medicine, but that seemed to be a complex task, so I modified the Dijkstra algorithm using a priority queue. I modified it in such a way that I created new nodes for each medicine, checked the distance and updated it.

Every number will represent a condition by a combination of symptoms in binary. So, I created a distance vector to store the distance of every condition.

The resultant condition after taking medicine was obtained as
Condition & (~Cure)
In this way, 1s in condition are turned to 0, and 0 are remained as they were.

The condition after side-effect was
Condition | (side-effect)
In this way, Side effects are added.
This gave a node to a new condition with new symptoms.