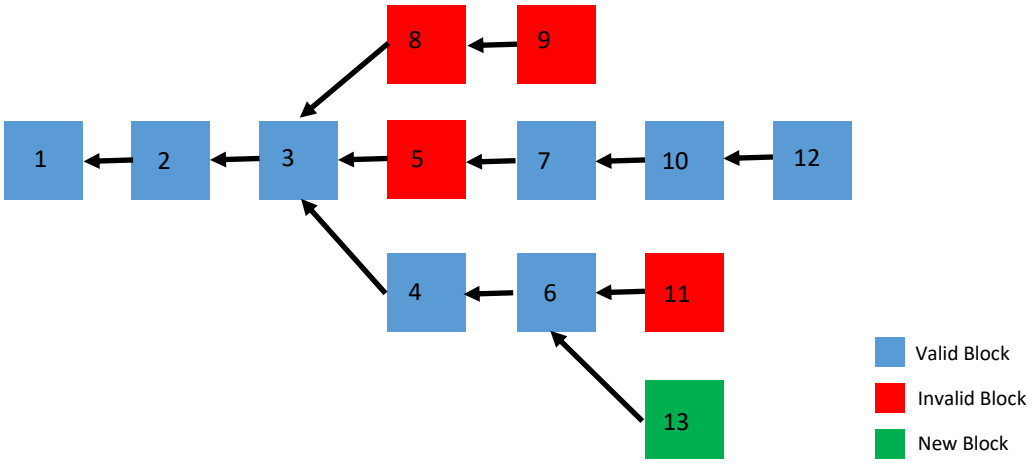
Visualization of InsertBlock_Malicious



Here, the set of last_blocks of the Malicious block chain are 9, 11 and 12. Now, from each of the these last blocks, we have to traverse to the very beginning, i.e. the block 1 and we need to evaluate the longest valid block chain.

Say, we start traversing from the block 9, and we find it to be invalid, then we will go to the previous block using the prev pointer and check for validity of block 8, which is again an invalid block, and again we do the same and now, we will find a valid block, and hence we will now start counting the number of valid blocks there are in the rest of the chain, i.e. 3.

Now we will start traversing from the last block say 11, and do the same traversing, checking and keep track of count of number of valid blocks in the chain, and similarly the process is repeated for the last block 12.

Please, note that when we start traversing from the last block 12, which is a valid block the counting starts, but while traversing, when we reach block 5, we found that to be an invalid block, and hence we have to now again start the counting from 1 when we find a valid block in the chain being traversed.

Now, we found that the longest valid block chain is 6-4-3-2-1 in the backward direction and hence we will insert the new valid block after the block 6, i.e. the prev pointer of new block 13 will point to block 6.

Important: The longest chain in the block chain need not be the longest **valid** chain.

Note: The naming conventions used here are just for simplicity, please follow the naming conventions used in the module.