Experiment 3.2

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Aim: To demonstrate the concept of Backtracking

401. Binary Watch

```
class Solution {
public:
    vector<string> readBinaryWatch(int turnedOn) {
        vector<string>ans;
        for(int hr = 0; hr < 12; hr++){
            for(int min = 0; min < 60;min++){
                if(__builtin_popcount(hr) + __builtin_popcount(min) == turnedOn){
                    if(min < 10){
                        ans.push_back(to_string(hr) + ":0" + to_string(min));
                    }
                    else{
                        ans.push_back(to_string(hr) + ":" + to_string(min));
                    }
                }
            }
        }
        cout<<"Saumyamani Bhardwaz_20BCS1682"<<endl;
        return ans;
    }
};
```

Output:

797. All Paths from Source to Target

```
class Solution {
public:
    void dfs(vector<vector<int>>& graph,  vector<vector<int>>& ans,
vector<int>& visited, int node){
        visited.push_back(node);
        if(node == graph.size()-1){
            ans.push_back(visited);
        }
        else{
            for(int i=0; i<graph[node].size(); i++){
                dfs(graph, ans, visited, graph[node][i]);
            }
        }
        visited.pop_back();
    }

    vector<vector<int>> allPathsSourceTarget(vector<vector<int>>& graph) {
        vector<int> visited;
        vector<vector<int>> ans;
        dfs(graph,ans,visited,0);
       cout<<"Saumyamani Bhardwaz_20BCS1682"<<endl;
        return ans;
    }
};
```

Output: