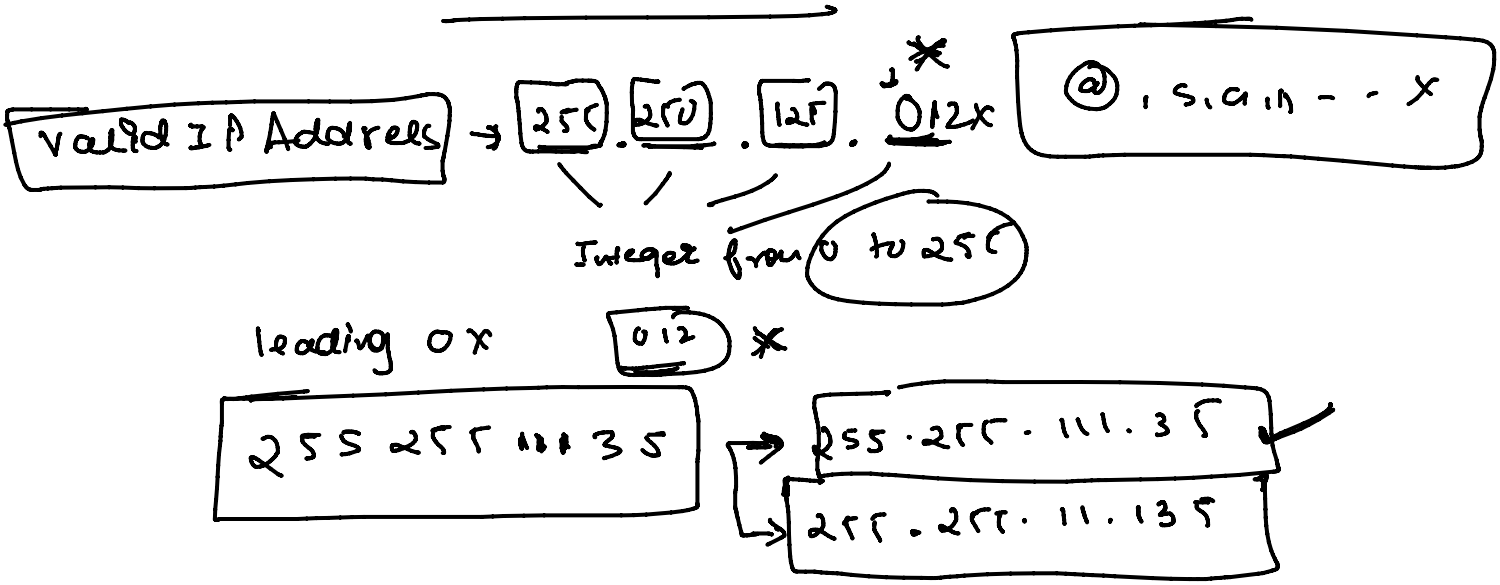
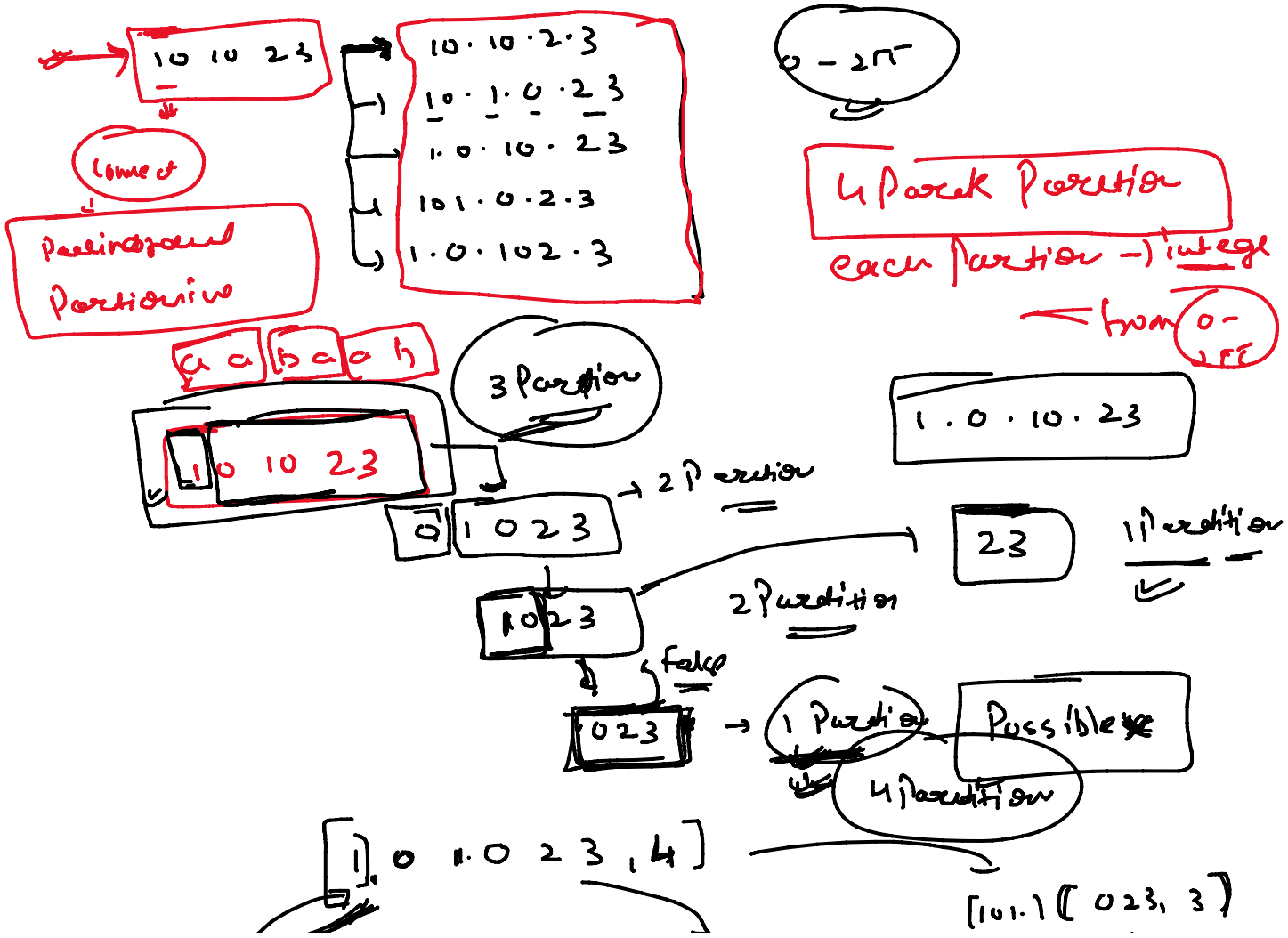
Class 74

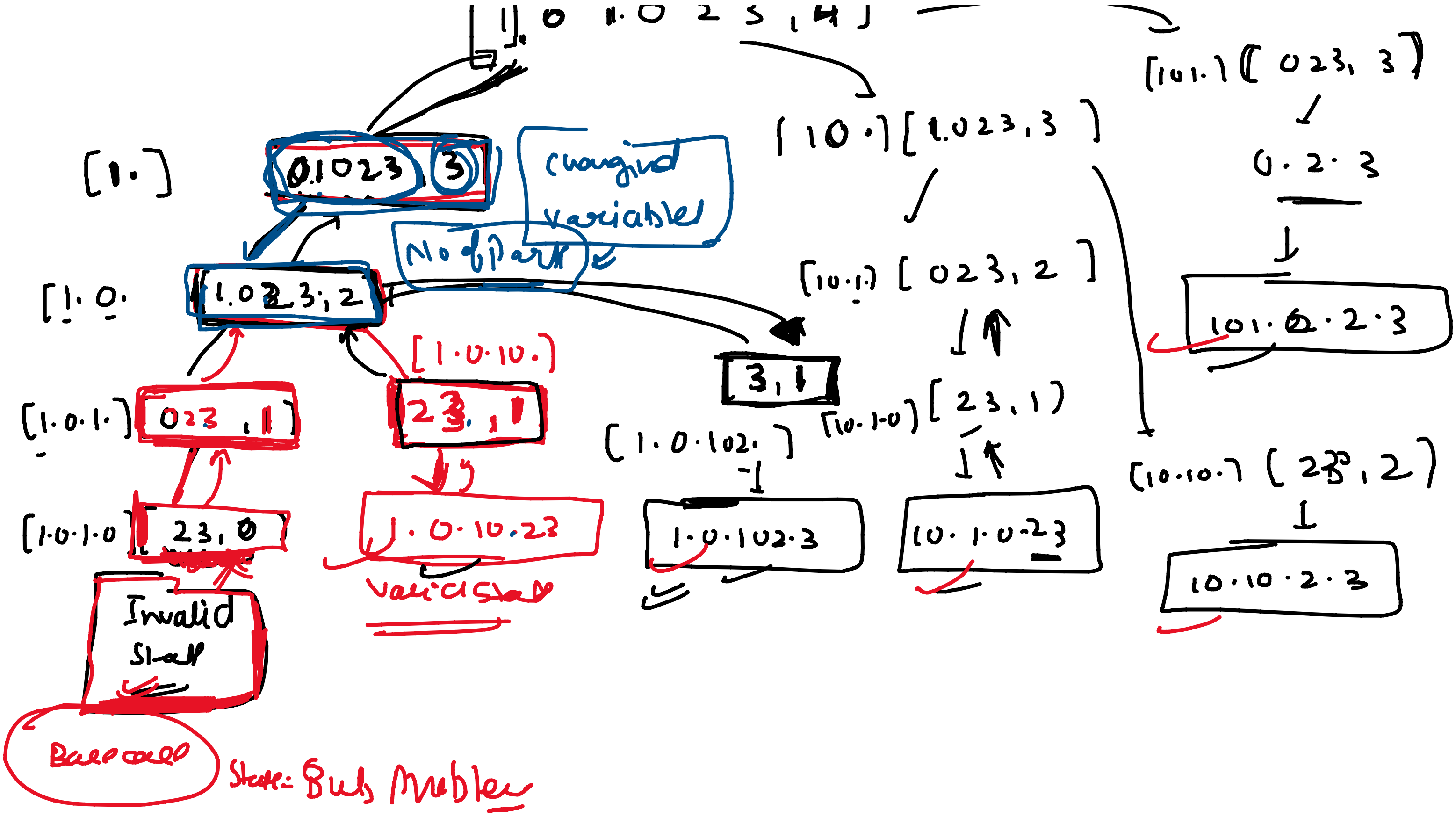
02 May 2023 21:08

CLASS-74

Restore IP Addresses







Restore IP Address

```
vector<string> restoreIPAdd(string s)
{   vector<string> ans;   // All valid IP Add
        string temp = "";   // valid IP Add
                                            // No of Partition
    res(s, ans, temp, 0, 0);
    return ans;
}

void res(String s, vector<string>& ans, String temp, int idx,
            int parts)
{   int n = s.size();
```

```
{   int n= s.size();
    if( idx== n)
    {  if (Part == 4)
       { ans.push_back (temp);
       }
       return;
    }

    if(Parts== 4)
    { if (idx != n)
          return;
    }

    if (s[idx]== '0')
    {
       temp += '0';
       if (Part < 3)
       {  temp += '.';
       }
       res ( s, ans, temp, idx+1, Parts+1 );
       return;
    }

    For (int i= idx; i<n; i++)
    {  string t= s. substr( idx, i-idx+1 );
       int no= stoi (t);
```

12345

12.34.5

idx

1 2 3 4 5

4 Part

3 Partition

1.2.3.4.

12345

1.23.45

0 1.2.3.

1.0.3.0

0 1 2 3

(01) (012) (013)x

4th Partition x

1.2. 3.4 5

12345

1234 > 255

tt = [1.1.2.]

```
int no= stoi(t);
if ( no > 255)
    break;
String tt= temp;
temp += t;
if( parts < 3 )
temp += '.';
=> res( s, ans, temp, i+1, parts+1 );
temp = tt;
}
}
}
```

tt = [1.1.2.]

temp = [1.1.2.]

123

1234

Combination

1 - n

n = 20

k size

[1 - 20] → All Possible subset

k size All Possible subset

Subset → with no p

with no p

n = 4 k = 2

[1,2,3,4] → {1,2,4} {1,3,4} {1,4} {2,3,4} {2,4} {3,4}

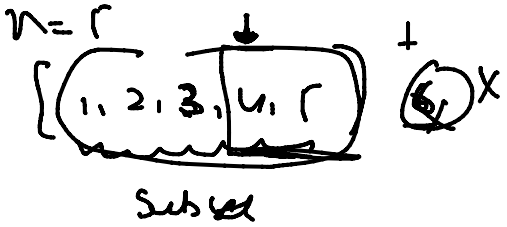
void comb (int n, int k, int i, vector<vector<int>> &ans, vector<int> temp)

[1 - n]

if (k == 0)
{
ans.push_back(temp);
return;
}

if (i > n)
{
return;
}

n = 5



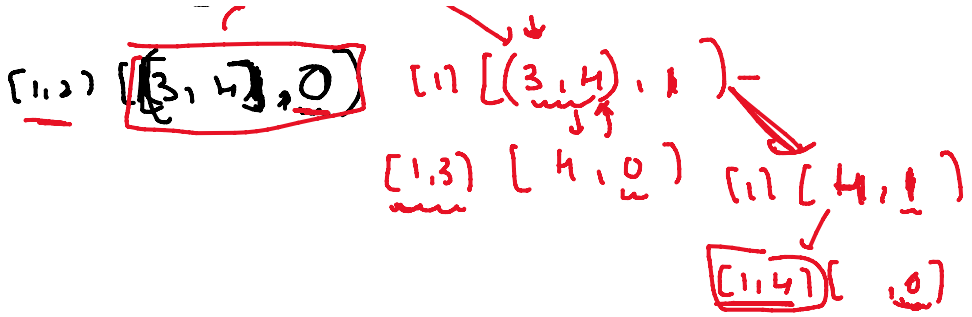
temp.push_back(i);
comb(n, k-1, i+1, ans, temp);
temp.pop_back();
comb(n, k, i+1, comb, temp);

n=4, k=2

[ ] [1 2 3 4, 2]

[1] [2,3,4,1]

[1,2] [3,4],0] [1] [(3,4), 1]



```
void comb(
{
  if(lc==0)
  {

  }
  if(i>n)
  {
    For(i=idx; i<n; i++)
    {
      temp.Pb(i); int a=5;
      comb(n, k-1, i+1);
      temp.pop_back();
    }
  }
```

k

lc=(lc-1)

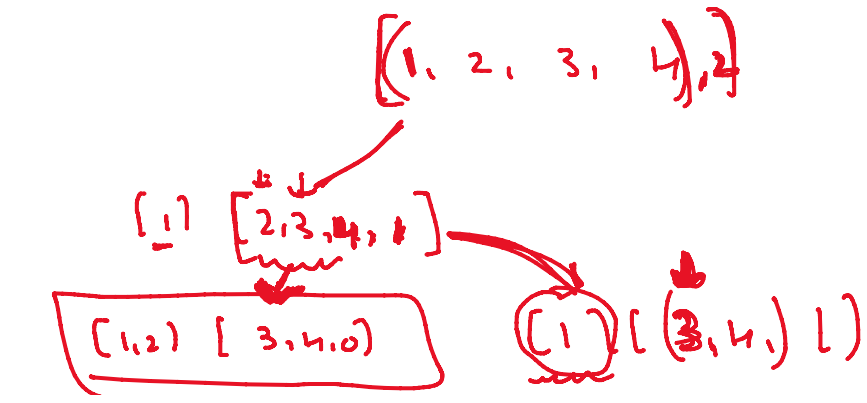
k-1

1 2 3 4 5

-1,0 1 2 3 4, 5

temp {-1,0,

a=4



[1,2) [3,4,0)

[1] [3,4,] [ ]